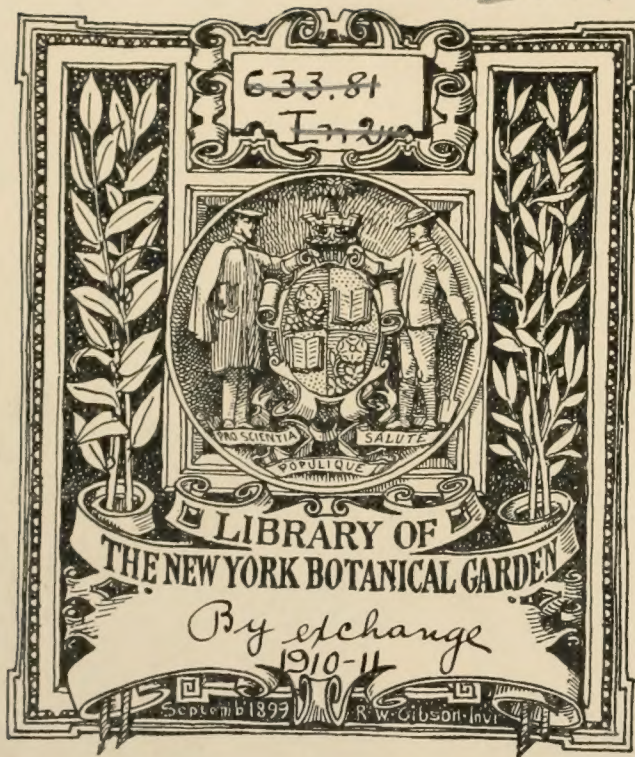


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Edited by HENRY C. PEARSON—Offices, No. 395 Broadway, NEW YORK.

Vol. XLIII. No. 1.

OCTOBER 1, 1910.

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Published on the 1st of each Month by

THE INDIA RUBBER PUBLISHING CO.,

No. 395 BROADWAY, NEW YORK.

CABLE ADDRESS: IRWORLD, NEW YORK.

HENRY C. PEARSON,
EDITOR.HAWTHORNE HILL,
ASSOCIATE.

Vol. 43.

OCTOBER 1, 1910.

No. 1.

SUBSCRIPTIONS: \$3.00 per year, \$1.75 for six months, postpaid, for the United States and dependencies and Mexico. To the Dominion of Canada and all other countries, \$3.50 (or equivalent funds) per year, postpaid.

ADVERTISING: Rates will be made known on application.

REMITTANCES: Should always be made by bank or draft, Postoffice or Express money orders on New York, payable to THE INDIA RUBBER PUBLISHING COMPANY. Remittances for foreign subscriptions should be sent by International Postal Order, payable as above.

DISCONTINUANCES: Yearly orders for subscriptions and advertising are regarded as permanent, and after the first twelve months they will be discontinued only at the request of the subscriber or advertiser. Bills are rendered promptly at the beginning of each period, and thereby our patrons have due notice of continuance.

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Entered at New York postoffice as mail matter of the second class.

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OUR TWENTY-SECOND YEAR.

WITH its issue for last month THE INDIA RUBBER WORLD completed twenty-one years of regular and continuous publication under one management. Such a record, though not in itself evidence of particular merit, is so unusual in the history of publishing, in these days of change, that the management feel justified in some measure of self congratulation. By the way, in acknowledging the felicitations of many friends, THE INDIA RUBBER WORLD is disposed to congratulate every live rubber man upon being connected with the trade at this time of its most substantial progress.

The growth of the rubber trade in the period under review is not easily measured, though obvious to every intelligent observer. The increase in the number of rubber factories—to say nothing of the increase of the size of the old ones—alone is proof of the immense growth of this interest in America. It may be mentioned here the United States census for 1890 reported the value of rubber goods products at \$42,853,817, while by 1905 the census returns had increased the valuation of the output of this industry to \$148,015,391. The figure must since have become immensely larger, in view of the growth of the tire trade, to mention no other branch.

But to our mind a more satisfactory basis for comparison is the quantity of net imports of crude rubber and

allied materials into the United States in the fiscal year 1888-89 (in which THE INDIA RUBBER WORLD was started), and in the year 1909-10, as shown in this little table:

	1888-89.	1909-10.
India-rubber	pounds	94,551,734
Gutta-percha		710,364
Balata		327,450
Gutta-jelutong		52,390,305
Scrap rubber		31,159,666
Total	31,934,285	179,139,519

These figures relate to the United States alone. Meanwhile the consumption of rubber has been introduced into several other countries, while it has been increased vastly in the older manufacturing countries in Europe. The fact that Pará exported 38,244 tons of rubber during the last crop year, against only 15,887 tons twenty-one years ago, is eloquent evidence of the constant growth of the world's rubber interest.

The new branches of the rubber industry developed since the establishment of this journal have been recorded too fully in its pages to require detailed treatment here. It is necessary only to refer to the birth of the gigantic tire industry, the great growth in the use of rubber insulation work, and the fact that in no other branch of the trade has there been a decline in the use of rubber.

During the period covered by the life of this paper important changes have occurred in business methods in connection with the rubber industry, as well as in nearly every other branch of commercial and industrial activity. This has been exemplified, in more than one instance, by the bringing of a number of plants under a single control, through the formation of a new corporation for the purpose. Any prejudice which at first may have been expressed against this new development appears to have been forgotten; at any rate, while the "combinations" appear, without exception, to have been successful, "independent" companies, on a comparatively small scale, continue to be formed and to grow into large concerns. Evidently there is room for all who desire to enter the rubber industry and who have the capacity for it—the right kind of brains and some capital.

It will hardly be denied that one effect of the working on a larger scale of the various branches of the rubber interest has been to give greater stability to qualities and prices of manufactured products and to the prices of raw materials, and such benefit is reflected in the business of the smallest as well as the largest houses in the trade.

It may not be generally recognized, though we believe it none the less to be true, that the most marked development in connection with india-rubber during the past two decades has been (1) in the introduction of planting on a practical scale, and (2) in the exploitation of forest rubber more economically. Thus is assured for the future more stable supplies of the raw material, and less frequent disturbances in market quotations. The tendency toward improved conditions in these regards may be illustrated by reference to the rubber exhibitions and congresses held within a few years past in Ceylon, at Djember, (Java), in London, and at Manáos. The fact that the

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International Rubber Exhibition in project for London next year promises to be supported so liberally is in itself good cause for satisfaction to the trade.

We extend to all rubber men renewed assurances of our distinguished consideration, and again congratulate them upon being in the game *to-day*, as compared with the "good old times" only twenty-one years back.

WHAT WILL THE TIRE HARVEST BE?

THE topic of chief interest in the rubber trade just now is the future of the tire business. True, the price of crude rubber is a matter of unceasing interest, but when people really want rubber goods the price is of secondary importance; when they don't want rubber goods, no price is low enough to tempt them.

The tire manufacturers are considering whether next season's demand will equal that of the season last closed. Likewise this is a question for the makers of other rubber goods. A few months ago, when the tire men were falling over each other to buy rubber at constantly advancing prices, the effect was to put up the cost of the raw material for erasers and baby rattles and garden hose as well. If fewer tires should be needed next year, and assuming the supply of rubber to be maintained, there would be relief in every other branch of the rubber industry.

Nor is it in relation to rubber, only that concern is felt in the industry over the cost of raw materials as affected by the demand for tires. The production of fewer tires would lessen the pressure upon the cotton supply, to say nothing of the other supplies which the rubber industry calls for. Every rubber man, therefore—and dealers and consumers as well as manufacturers—has reason to be interested in the question whether as many or more tires will be wanted in 1911 than in the present year.

It is not the purpose of this article to answer the question here raised. It is the province of a newspaper to record proved facts rather than to indulge in prophecy, and nowhere is it less safe to prophesy than in the rubber trade. But there are a few considerations that occur to us as worthy of note in this connection.

Probably fewer automobiles will be made for next season than during the last. At a time when everybody able to buy a car appeared anxious to acquire one, the makers naturally sought to meet the demand. If the market has been overstocked just now, it is only temporarily. The automobile, as we have insisted for so many years, is "here to stay." Sometimes, in a real estate "boom," too many houses are built for immediate needs; but later every house is occupied, and the work of building goes on at an unprecedented rate. There will be more automobiles, rather than fewer, until better means of transportation displace them.

It is too early yet for the automobile builders to make up their minds as to how big a trade to plan for next season, but the figures are likely to be somewhat smaller. It is a case of waiting for the trade to catch up with itself.

Certainly the trade cannot always grow, year by year, at the rate which we have seen recently.

Suppose only the same number of machines should be made this season as last. In view of the demand for replacements, the number of tires needed for 1911 would be enormously larger than in any previous year. Suppose the number of new cars should be reduced one-fourth or more, still as many tires will be required. What the rubber men may have done of late in stocking up tires too liberally nobody knows; but the actual demand for tires next year is not likely, under any conditions, to fall short of that for the present year.

We have dealt thus far only with automobile tires. The fact that the coming automobile show at Madison Square Garden, in New York, is to be followed by another show under the same management, also lasting a week, devoted to commercial motor vehicles, is eloquent testimony to the growing importance of the latter type of vehicles, and every one of these adds to the demand for rubber.

This month falls in the dull season in rubber tires—between the rush of last spring and what measure of trade another spring may reveal—but even so, the tire industry is only experiencing its beginnings, and it is a wise Providence that has ordained the cultivation of rubber in time to permit of a supply at one and the same time both for tires, and the thousand and one other articles for which the elastic gum is essential.

PROGRESS ON THE MADEIRA.

THE readers of THE INDIA RUBBER WORLD have been kept informed of indications of commercial progress of the Madeira river, which is destined to become an outlet to the world's richest natural rubber field—Bolivia. Not the least important of these indications is the regular publication, at the headquarters of the engineering corps at work on the Madeira-Mamoré railway, by some of the bright young American engineers temporarily exiled there of a newspaper—The Porto Velho *Marconigram*.

This remotely published little sheet is not as yet impressive in appearance, but it happens to be of the same size and general appearance as the earlier numbers of the *Sun*, which long has been one of the principal newspapers of New York. As indicating the up-to-dateness of the Madeira river newspaper, it may be mentioned that the latest issue received in New York mentions the new prices for automobile tires quoted by some of the leading American manufacturers.

But what is of very much more importance is the fact that a large part of the contents of the *Marconigram* is devoted to the work in progress for improvement in the sanitation of the Madeira valley. It is evident that definite results are being attained in this work, and this is one of the most promising facts in connection with the great enterprise now developing for opening the Bolivian rubber field to the world.

It is not unreasonable to suppose that ultimately the Madeira region will become as habitable as the now populous Mississippi valley in the United States, a region which Charles Dickens, in his "Martin Chuzzlewit," not longer than 65 years ago, felt called upon to warn the world against.

AN INCREASE OF MORE THAN 20 PER CENT. in one year in the value of United States rubber goods to the new non-contiguous territorial possessions of this country at first sight seems to indicate progress. It is possible, however, that the larger figure for the year last is due in part to higher prices of products than in former years. However this may be, it appears that the exports of belting, packing, and hose were smaller in value than last year, and the figures for boots and shoes were smaller than in 1908.

COMMENTING ON THE PRICES OF RUBBER GOODS in America, the Providence (Rhode Island), *Evening Tribune* says:

As for the level of American prices, broadly considered, it is always artificial, of course, when compared with that of most other producing nations. What is the tariff for it not to raise prices?

Since "most other producing nations" adhere to the protective policy, it is not plain why the tariff in the United States should, apart from other considerations, "raise prices" above those in Europe.

IT IS INTERESTING TO LEARN from many newspapers, published throughout the United States [for example, in the Wilmington, Delaware, *Evening Journal*, of September 17] that crude rubber is now at \$3 a pound. There seems still to be people who insist that the price of crude rubber is increased by the import duty on rubber goods, and the able journalists who insist upon mixing their tariff views with all trade news may, before snow falls, get crude rubber up to \$40 a pound, and put all the blame upon Congress.

THE ABLE LITTLE ROCK (ARKANSAS) *Gazette*, anent the recent frenzied discussion of a United States senator having an interest in a rubber company, expresses the opinion that senators should not be engaged in great business enterprises. Having "wrapped around themselves their senatorial togas," they should "pass their official lines in the serene seclusion of making laws," shut off from all touch and contact with money making. Their "senatorial togas" might keep them from freezing in winter, but how about food? The able *Gazette's* idea, followed to a logical conclusion, would prevent any but wealthy men from becoming senators—and a man already wealthy might have acquired at least part of his fortune from shares in a rubber company. How, then, is the country to be saved from the "rubber trust?"

SOMEBODY IS A PREVARICATOR, we learn from the esteemed Lowell (Massachusetts) *Sun*, for asserting that certain rubber companies formed before 1906 are "subsidiary companies" to a corporation created in that year. If the editor of the last edition of "Webster" had waited until seeing this in the Lowell newspaper he might not have defined a "subsidiary company" as—

a company of the shares of stock in which another company has at least a majority, giving it control.

In this sense, we believe that most of the large industrial corporations to-day hold shares in companies of prior formation, whether these may properly be called "subsidiary" or not.

IT IS NO CREDIT TO ANY MAN, according the able Des Moines (Iowa) *Register and Leader*, to add to the consumption of crude rubber in the United States. By so much as one adds to the home market, "he reduces the market outside of the United

States"—on the idea that, there being only so much rubber in the world, the more we take the less there will be for other countries. Does the Iowa newspaper think that true statesmanship would lie along the lines of discouraging the American rubber industry, in order to encourage that of Europe and Asia and Australia? But the truth is that the world's production of rubber has been increased enormously of late years, through the efforts of the governments, scientists and capitalists of many countries, but by American influences more than any other.

PROSPECTS OF OVERPRODUCTION.

THE principal editorial article in London *Electrical Review* for August 26, on the possibility of overproduction of rubber, is introduced as follows:

"The July number of THE INDIA RUBBER WORLD has a leading article on the above subject, and as a large number of the readers of the *Electrical Review* must be interested in this question, some as manufacturers and others as users of rubber goods, and again others as shareholders in rubber plantation companies, we propose to briefly indicate the views expressed by our contemporary, which, we believe, are the views held by well-informed people in the United States." [Here follows a summary of THE INDIA RUBBER WORLD's article, after which the London paper comments]:

"When dealing with this subject on previous occasions, we have expressed the opinion that it will take some years for the production of rubber to so far overtake the demand as to bring about anything like over production, so that we are in general agreement with the conclusions of our contemporary; but our opinions were based on the anticipation that there would be hardly any appreciable increase in the output of wild rubber, as we considered that with lower prices it would no longer pay to collect many of the inferior qualities, or to collect from those regions which were so far from the ports of shipment as to make the cost of transport to the port a very heavy item. It is undoubtedly a very difficult matter to make any estimate of what the production of plantation rubber will be three or four years hence, but if it increases so rapidly as to lower the price to a figure comparable with the prices of 20 years ago, we believe that the demand will grow in proportion owing to the development of existing uses, and the introduction of new uses, for rubber which will follow the fall of prices of the raw material."

PROGRESS IN THE PHILIPPINES.

THE first annual edition of the Manila *Times*, designed especially for the interest of investors and settlers in the Philippine islands, is a very comprehensive review of the recent progress and present condition of the islands, and as such can hardly fail to interest one who is concerned at all about that part of the world, or the record made in colonization work by the United States. The general progress of Philippine commerce is indicated by the custom house figures at Manila, showing combined exports and imports ten years ago of \$27,756,729, whereas for last year the total was \$58,838,940.

The last part of the Philippines is brought under control by the United States authorities is what is now known as the Moro province. The work of pacification was long delayed here, and the province now has a greater number of troops in the Philippine islands. It is shown in this publication, however, that the native Moro rulers are loyal to the United States government, and that English is being introduced in the Moro schools. Improved methods of cultivation are being introduced, and there is an increase in trade. This province is the principal home of rubber in the Philippines, and some rubber has been planted. It is mentioned that 10,000 planted rubber trees on the Island of Jolo.

RUBBER FOUND IN MILKWEED.

TO THE EDITOR OF THE INDIA RUBBER WORLD: At the risk of being classed with the chasers of the "rabbit weed," the writer would direct attention anew to the common milkweed as a possible source of rubber.

Ten years ago I gathered a sufficient quantity of the latex to yield upon inspissation something over 2 grams of gum. No means of coagulation or curing were employed, the aqueous content being simply driven off by gentle heat. The pressure of other matters prevented an examination at that time and the investigation was discontinued.

An analysis recently made of a portion of this ten-year-old sample showed a quantity of vegetable matter, resins, chiefly a white, crystalline resin resembling albane, and 20 per cent. of hydrocarbon.

By the precipitation method I obtained 21 per cent. of hydrocarbon in character not unlike a combination of rubber and balata, with the qualities of rubber predominant.

This extracted gum has a specific gravity slightly higher than 1. It yields to the usual solvents of rubber, resists the same reagents, so far as tested, softens somewhat at a temperature which softens gutta-percha, has elasticity not possessed by the latter, and, most important, is susceptible of cure. A bit of the gum rolled into a slender thread and subjected to the acid cure is extensible to five times its length, and upon release returns sharply.

It is believed that the matter will repay attention. At least it offers to the student an interesting subject both for study and practice—opportunity to actually gather, coagulate and analyze a rubber-bearing latex. Special methods of treatment may be found to greatly improve results.

The plant flourishes throughout a great part of the United States, and at this season is already flaunting its fat, rubbery-looking leaves, waiting to be milked.

The proportion of hydrocarbon may be found to be larger than here reported, since oxidation to a considerable extent is not improbable in the sample tested, due to its age. Should results seem to warrant, the cultivation of the plant could offer no great difficulties.

There is an interesting possibility of profitable by products. The strong fiber of the stalk is capable of many uses, and the cotton of the seed pod might prove a substitute for ordinary cotton for some purposes.

The character of the plant is such as to make the extraction of the latex easy as compared, for instance, with guayule. "Burbanking" might develop an improved variety which would repay planting if the present did not.

Should THE INDIA RUBBER WORLD see in this matter sufficient of promise to warrant its lending encouragement it would be interesting to have investigators report results in its columns as the season progresses.

The writer is forwarding the remaining gram of the old sample of gum to Dr. Charles Knight, chairman of the committee of the American Chemical Society on standardizing rubber analysis, and head of the new school of rubber chemistry connected with Buchtel College, Akron.

A. T. SAUNDERS.

Chicopee, Massachusetts, September 7, 1910.

RUBBER INDUSTRY IN JAPAN.

THE number of rubber factories in Japan continues steadily to increase. It is true that many of these are yet small, but the same was true of the rubber factories of America and Europe at the beginning. A number of the Japanese concerns are devoted alone to the insulated wire industry, and few of them as yet make a diversified line of goods. THE INDIA RUBBER WORLD February 1, 1908 (page 147) contained what was at that time the most complete list of Japanese rubber factories that had yet

been compiled, embracing 17 names. There is now in hand a list of what are classified by a competent Japanese authority as "rubber factories," embracing twenty-eight addresses, their output including practically every form of rubber goods. The location of these concerns is as follows: 8 in Tokio, 7 in Osaka, 6 in Tokiofu, 3 in Kobe, 2 in Osakafuka, 1 in Kyoto, and 1 in Yokohoma.

* * *

With two exceptions the names of the Japanese rubber companies are expressed in the vernacular, which sounds strangely to the English ear. The two companies referred to are branches of British corporations, being respectively the Dunlop Rubber Co. (Far East), Limited, at Kobe, and the Ingram Rubber Manufacturing Co., of Japan, Limited, also at Kobe. The growth in consumption of rubber in Japan is indicated by these statistics of imports from a consular report:

In 1906 pounds 600,728	In 1908 pounds 1,939,430
In 1907 603,125	In 1909 1,331,826

"PALO AMARILLO" RUBBER BOTTLED UP.

THE Mexican "Palo amarillo" (yellow tree) is still being "boomed" as a rubber producer, and more extravagantly than ever. The \$20,000,000 Consolidated Palo Amarillo Rubber Co. has been mentioned already. [See THE INDIA RUBBER WORLD March 1, 1909—page 214]. Now are to be taken into account these additional companies, organized to "handle such subsidiary enterprises which could not be advantageously conducted by the Consolidated Palo Amarillo Rubber Co.:"

Palo Amarillo Mexican Crude Rubber Co., S. A. Incorporated in the City of Mexico, April 12, 1910, with a capital of \$50,000. General Manager: Mr. Guillermo H. Ellis, banker, broker, and capitalist; head of the banking firm of W. H. Ellis & Co., 29 Wall street, New York City.

Mexican Consolidated Palo Amarillo Rubber Co., S. A. Capital, \$200,000. President: Mr. Guillermo H. Ellis.

In a lengthy report on "Palo amarillo" a Mexican newspaper states that "The general office of the Consolidated Palo Amarillo Rubber Co. is at No. 3 Broad street, New York." The name "Guillermo" evidently has been adopted by Mr. Ellis since his becoming interested in Mexico. In the New York Telephone Directory is the entry—

Ellis, W. H. 3 Broad, 6822 Hanover

No occupation is given, though this is done in the case of most telephone patrons. The New York City Directory records—

Ellis, Wm. H., broker 29 Wall R 103

The last figure indicates that the business of this capitalist is domiciled in room 103. Furthermore, the two addresses are only around the corner from each other, the intermediate corner entrance being utilized by the greatest banking firm in the city. The title Duke of Hawash, conferred upon the American capitalist by the Emperor Menelik does not appear to be used anywhere in booming "Palo amarillo."

A fact not generally known is that "the company owns the only process for the extraction of the rubber from the Palo amarillo tree, having secured that patented by James McConnell Saunders, an English expert, at present employed as chemical expert by the Mexican Government." It would appear, therefore, that Mr. Guillermo H. Ellis has the supply of this kind of rubber effectively bottled up, and that the impatient world will have to wait for it until he gives the word.

LATE racing news from England indicates that people who have to do, in an important way, with rubber planting have both the time and the money to figure prominently on the turf. The purchase is reported, by Mr. William Wellington Bailey, director of rubber companies in Ceylon and the Malay peninsula, of a horse named "Bachelor's Double," a recent winner of important racing events, at the reported price of 7,000 guineas [= \$35,768.80].

Pará, Manáos and the Amazon.

By The Editor of "The India Rubber World."

SEVENTH LETTER.

The Rubber Fields Beyond Manáos.—Matto Grosso, Peru, the Acre, and Venezuela.—The Many Kinds of Rubber in Peru, Other than "Caucho."—Reminiscences of Manáos, and of Some Visitors There.—The Return Trip Down the Amazon, and Welcome at Pará.

SOME people at Manáos are still wrathful over an article published in the New York *Herald* back in February, 1907, entitled "Peter Panning in the Land of Poco Poco." It was an alleged interview with Casper Whitney, illustrated by reproductions of photographs, such as all tourists may purchase anywhere in Brazil. One of these was labeled "Indian of the Upper Amazon Never Before Seen by White Man." Another pictured Indians found only in the Argentine republic, some 2,000 miles from the region in which "Peter Pan" was "poco-pocooing." By keeping the canoe close in shore he fortunately slipped by without attracting the attention of these savages!

He went cautiously up the Amazon as far as the Rio Negro, where he found that "steamboat navigation ceases." Here he took to canoe, paddled past Manáos, with its waterfront crowded with buildings and its huge floating docks, passing through the fleets of ocean going steamers that crowd the river basin even to midstream, and saw only jungle covered shores and watery wastes never before trodden by the foot of white man. From danger to danger, from little jeopardy to great jeopardy, he advanced up to the Cassiquiare river.

His adventures were marvelous. He fought his way through schools of crocodiles that slew natives right and left; slept in trees while cannibals held orgies on the ground beneath, and at last—worn, ragged, half starved, but with unfaltering imagination—he came down the Orinoco, never before seen by white man, and was safe.

Peter need not go so far afield for material. A little "panning" nearer home would surely get color. Why not offer the

Herald a story on "Jigging for Giraffes in Jersey City," and be back in the hall bedroom before dark?

RUBBER FIELDS OF MATTO GROSSO.

One really is obliged to go as far as Manáos to appreciate what immense rubber producing areas extend south, west, and north. Take, for example, the great Brazilian state of Matto Grosso. It produces considerable rubber, but has possibilities in the way of infinitely greater production, once its territory is explored. It is over a million square miles in area, reaching from Amazonas on the north to Paraguay on the south. The Guaporé river, which flows into the Amazon through the Madeira, is part of the boundary line between this state and Bolivia. The river just named is but one of a number of important streams, coming from the great forest reaches in which is much rubber. Of the others perhaps the Tapajós is the most important.

The state of Matto Grosso is very sparsely populated, 150,000 souls being a liberal estimate. No portion of the Brazils is perhaps better named than this, the words meaning "Dense Forests"—practically as dense, indeed, as at the time of its discovery 400 years ago. The forest lands are wonderfully rich in valuable woods, medicinal plants and barks, and all the sturdy pioneer needs to do is to go in and help himself.

It was as late as 1893 that rubber trees were discovered in Matto Grosso and the official report declared that there were "thousands of millions" of them. Undoubtedly Matto Grosso rubber came out through the Xingu, the Tapajós, and the Guaporé before the dates mentioned, but with no record of just where it came from. Where there is regular rubber gathering in this state, *estradas* are laid out, each gatherer attending to something like 100 trees. According to de Mello, latex cups are not attached to the tree itself, but little troughs made from



A SHIPMENT OF CAUCHO AT ITAITUBA

[This class of rubber grounds in Brazil, often on the same lands with *Hevea*. Itaituba is at the head of navigation on the river Tapajós. From "Album do Estado do Pará,"]

the wood of the "corticeira" are fastened to the tree with pegs, the joint between tree and trough being filled with clay. He claims that the milk is coagulated by the addition of alum dissolved in hot water. The freshly coagulated latex is then pressed between boards to expel as much water as possible.

His description is not altogether clear in many respects, and it may be that he has confused the coagulation of the *Hevea* latex with the boiling of the "mangabeira" milk. It is, however, true that much of the Matto Grosso rubber is poorly handled, and is usually air cured instead of being smoked. That, however, will rectify itself when the territory is opened, as the smoked product brings a much better price. Matto Grosso "coarse" is to-day quite common; "fine" and "medium" are also on the market.

An immense region lying along the eastern range of the Andes mountains and extending to the Amazon belongs to Peru. It is known as the forest country, or *montana*, and is watered by a great network of rivers. These forests are not only rich in cinchona, vanilla, and cacao, but there is a great deal of india-rubber. There are three distinct kinds of rubber gathered in the Amazon provinces of Peru: (1) "caucho," which is the product of the *Castilloa Ulei*; (2) "seringa," *borracha* or "jebe fino," which comes from a *Hevea*; and (3) the "orco-jeringa" or "weak fine" *Hevea*. There are a number of theories regarding the reason for the shortness of fiber in the weak fine. The common belief is that, as it is found on high lands far above the sea level, it is due to locations where the *Hevea* is not at its best. It is possible, however, that it may be caused by the admixture of another latex with that of the *Hevea*.



MAP OF THE ACRE TERRITORY.

[The triangle shows what Brazil acquired from Bolivia.]

THE LAND OF "CAUCHO."

The tree producing caucho was for a long time unidentified, and little was known about it except that the rubber was gath-



MANGUE (*RHIZOPHORA MANGLE*) NEAR PARA.



VEGETATION ON THE RIO UCAYALI (PERU.)



INDIAN ON THE UPPER UCAYALI.

ered by a system that involved the destruction of the tree. This method still obtains and is as follows:

Near the base of the tree a broad V shaped cut is made and the latex is caught in an earthen vessel, sometimes in a waterproof bag. After all the latex has been drained out of such incisions, the tree is cut down. Then circular incisions are made about the trunk, about two feet apart, and the latex is run through tubes of thick bamboo and caught in basins or calabashes. The milk is next passed through a sieve to remove bark and leaves, and then is ready for coagulation. Very often the rubber gatherers hew a trough in the soft wood of the fallen rubber tree in which to coagulate, while others dig a hole in the ground and pour the milk into it. If the natives have soap or the juice of the Peruvian vine called *leche camole*, the latex coagulates very rapidly, and the result is a square block known as cacho or Peruvian slab. This slab cut in slices forms what is known as cacho strip. The grade of rubber known as cacho ball is made up of the strings of rubber that coagulate in the incisions on the tree and are stripped off a couple of weeks after it has been cut down. For the sake of convenience in handling they are made into balls.

For a long time cacho came only from Peru, but it is now found to be distributed widely throughout the Amazon valley. The cacho gatherers in large parties disappear into the trackless forests and travel sometimes for hundreds of miles over territory never before explored, destroying trees wherever they find them.

It is claimed that the gatherers get from 15 to 25 pounds of dry cacho from one tree. It has often been suggested that the latex could be taken out much as the *Hevea* latex is. Native



FOREST SCENE IN COLOMBIA.

gatherers, however, claim that such cutting of the bark results in destruction of the tree by either disease or insects. It is also claimed that, when the tree is cut down, shoots spring up from the stump that in a short time become thrifty trees. It is said that every eight years a *cauchal*, which is where the cacho trees flourish, can be harvested.

The word cacho, really the Spanish for caoutchouc, has been the cause of a great deal of misunderstanding. Many writers speak of caoutchouc and of its destruction in Peru. Readers suppose they mean that *Hevea* trees are cut down as well as *Castilloas*, which is not the fact. Nearly all writers on Peru and Bolivia make this mistake, and even the official publications are not always clear.



RIVER SCENE ALMOST ANYWHERE ON THE AMAZON.

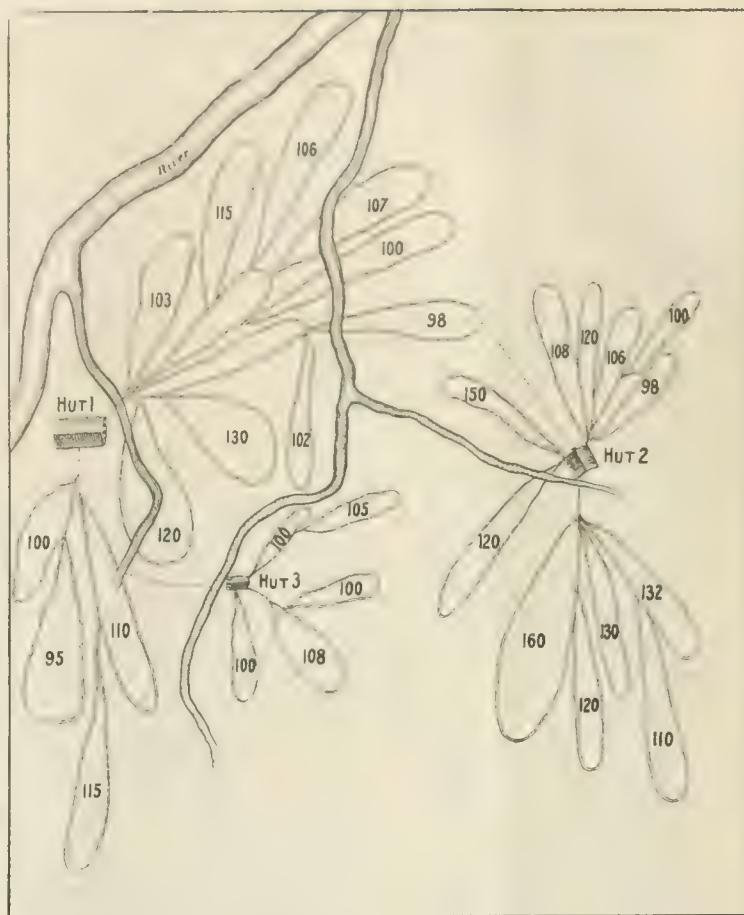


SHIPPING SCENE AT MOLLENDO, PERU.

The word *caoutchouc* means rubber of any and every kind. Indeed it is a synonym for india-rubber. *Cauchó*, on the other hand, is a specific trade name of world wide acceptance for the product of the *Castilloa Ulei*.

RUBBER CONDITIONS IN PERU.

"Peruvian fine" Pará, as well as Peruvian "weak," is very plentiful in the Amazonian basin, and it usually comes out by way of Iquitos. After the Pará rubber became a real factor in Peru, laws were passed and concessions granted for rubber bear-



PLAN OF A "SERINGAL" IN PERU.

[Hut 1—With 15 *estradas*, employing 7 men. Hut 2—With 12 *estradas*, employing 6 men. Hut 3—With 5 *estradas*, employing 2 men.]

ing lands. These laws are of two sorts. One form of contract is for the leasing of the lands containing rubber trees; the other for the renting of *estradas* of 150 trees each. For the first, the *concessionaire* pays a royalty of a trifle less than a cent a pound for the rubber extracted (2 soles per quintal) which is collected with the export duty. Under the second form, the government charges about 10 cents a year for each hectare [about 2½ acres] of land upon which the estate is situated.

The Peruvian government allows these contracts to become effective only when the land is viewed by an expert surveyor and approved. It also demands a guarantee from the *concessionaire* in the way of the purchase of interest bearing bonds, which are held for the purchaser's account, the interest being paid to him. The government has been exceedingly generous with those taking up lands and has voted many valuable concessions to the companies that have constructed roads.

The great rubber city in eastern Peru is Iquitos, for a long time of not much commercial importance, and only a collection of palm-thatched houses occupied largely by Indians. By the rise of the caucho industry, however, it became the place where rubber gathering expeditions were outfitted, and where the rubber was brought for shipment down the Amazon. That great river, by the way, is called *Marañón* there, and is navigable some 300 or 400 miles beyond. In other words, there is a good navigable waterway from Manáos up the Amazon for about 1,600 miles. More and more steamers go to Iquitos and, eventually, it will be a city of great commercial importance. The Peruvian *montana*, which covers perhaps 100,000 square miles, is as rich as any part of the tropical world, and when its quarter of a million Indians, many of whom are excellent workers al-



STRAW BOATS ON LAKE TITICACA.



RUBBER TAPPER'S HUT, FROM THE PURUS, UPPER AMAZON

[London Rubber Exhibition, 1908.]



EXHIBIT OF THE STATE OF AMAZONAS, BRAZIL.

[London Rubber Exhibition, 1908.]

ready, awake to the dignity of labor, a greater wealth than that possessed by the Incas will be produced by them.

THE ACRE RUBBER FIELD.

Perhaps the most interesting of all rubber producing territories in South America is *O Acre*, or The Acre—not a state but a federal territory. It lies in the upper Amazon valley, close to Peru and Bolivia, and is watered by a labyrinth of rivers great and small. Of these rivers the Amazon, the Javary, the Ucayali, and the Madre de Dios, with others, either form boundaries for the territory or make the forests of easy access. It is probable that no other part of the world is richer in rubber than is The Acre. Most of the rivers are navigable, some of them for hundreds of miles, and the territory is easier to reach from Pará and Manáos than any other large Brazilian rubber producing territory. The country is healthful and the flood seasons brief. The climate is not as humid as in the lower

Amazon valley, and the heat is not so unbearable as in the latter region.

In the upper valleys the rainy season begins in September and ends in December, while in the middle and lower valleys it is months longer, beginning in November and terminating in March. In the southern regions the rains begin in June and end in October. It will thus be seen that the Acre territory offers a much longer working season than the others. The fine grade of rubber known as "Purus" comes from The Acre.

The Amazon for more than 600 miles forms a boundary between Brazil and Colombia. There is a vast territory north of the river that is watered by the Putumayo, the Napo, the Caqueta and their tributaries, forming a wonderful system of waterways into a country rich in *Hevea* rubber, in caucho and balata. Very considerable quantities of rubber come to Manáos from this section.

This territory has been more or less worked for many years,



TYPICAL RUBBER BARRACKS ON THE RIVER JURUA, IN BRAZIL.



A RUBBER TREE CUT DOWN FOR ITS PRODUCT

although the rubber has not been very extensively gathered, the early exploration having been for quinine. It appears on the map as being Colombian property, but it is well to add that it is claimed by Peru. Indeed, Peruvian custom houses were established and taxes collected on all exports. The governments of Colombia and Peru, however, put in force a *modus vivendi*, giving both countries equal rights on the Putumayo until the boundaries settled by arbitration.

Most of the rubber exploitation in the Brazils has been south of the Amazon. That there are a great variety of rubber producing trees north of the Amazon is undoubted. There are many sections where the *Hevea Brasiliensis* does not seem to be present. The *Guyanensis*, however, is very widely distributed, and produces a rubber that is well worth gathering, although it is probable that it needs different treatment in coagulation, from the *Brasiliensis*.

The southwestern states of Venezuela, notably Amazonas, drained by the Rio Negro, are said to be very rich in rubber trees. A certain amount of rubber known as "Angostura," fine and course, comes down to Manáos and once the territory, particularly to the east of Bolivar, is explored, both rubber and balata undoubtedly will be found in abundance.

The upper Rio Negro, it will be remembered, is joined to the upper Orinoco by a river known as the Casiquiare, so that there is a waterway from Manáos to the upper Orinoco.

It is said that gatherers up the Rio Negro are much more careless than they are south of the Amazon. A rubber exporter in Manáos, describing their method of tapping, said that the gatherer first made a trough around the body of the tree, using the pith of the "miritic" palm. Above this he made incisions, and as the latex ran down into the trough, it drained off into a little earthen pot set on the ground. Hardwood smoke was used in curing instead of palm nuts.

REMINISCENCES OF MANÁOS.

A city so far removed from New York as Manáos is an ideal reflector of the sort of permanent impression a foreign visitor leaves behind him. It is usually some particular idiosyncrasy, mannerism, or fad that is held in remembrance. Thus, for example, Manáos remembered a speculative rubber promoter as possessing a very broad, tooth-showing smile; a millionaire yachtsman and Wall Street magnate as a good-natured prince of perspiration; a New York city official, once in rubber, as dictating to three stenographers at once (why didn't he hire one good one?), and so on.

Perhaps the one whom they remembered best, and with sur-

prised awe, was a certain boyish American, who appeared on the *avenida*, coatless, vestless—the only man in Manáos without belt or sash, his trousers held up by good old-fashioned "galluses." This youngster crossed the Andes, bought rubber, came down the Madeira and got it through to New York at a profit. Not only that, but he engaged to build a Madeira-Mamoré railway. Others got concessions, to be sure, and he did not, but it was not owing to his lack of ambition.

When the time came for our departure from Manáos, the steamboat company allowed us to go down on a cargo boat. At first the officials strongly advised our waiting a week for one of the regular passenger boats, picturing the discomforts of a vessel not fitted for passengers, but finally capitulated.

One very interesting formality that we were obliged to go through before leaving Manáos was the payment of a head tax amounting to \$9 for permission to leave the country. I tried to get the official to make it \$8.08, but got not the slightest encouragement. I was further obliged to deposit with the steamship company \$50, to be turned over to the hospital board in



INTERIOR OF AN "IGAPO."
In the Purus river valley



EXAMINING RUBBER IN AN AMAZON WAREHOUSE.



GATHERING TURTLE EGGS ON THE AMAZON.

Barbados for care or funeral expenses in case I arrived at that careful island with yellow fever.

DOWN THE AMAZON.

Early on Sunday morning, therefore, we said our good byes and made our way down to the pier, where a delegation from the Commercial Association was waiting to bid us *bon voyage*. We all shook hands and said nice things to each other; the president gave me a beautiful spray of orchids, the *Catalaya superba*, and with a final adieu we went aboard. Shortly after, the boat started down river. Our last glimpse of Manáos as we steamed away was the huge dome of the theater, its rich blending of red, blue, yellow, and green tiling blazing in the sunlight like a gigantic fire opal. We passed by the red clay shores, and at length out of the black water of the Rio Negro into the yellow Amazon again.

The captain was a veteran in the Amazon trade, and knew Manáos thirty years before, when it was only a farmyard. He gave me his cabin and laid himself out to make me comfortable. The boat was a slow one, but with the current we had no trouble in doing 13 knots, and passed Itacoatiara early in the evening. The river had risen 10 feet since we came up, and by the water-marks on the trees had still another 10 to go. The floating logs, trees, and grass patches had multiplied greatly.

The food was excellent, the drinking water was good, and, swinging our hammocks high up on the rear deck, we were very comfortable. The big flat bottomed freighter was as steady as a rock, and slid through the water as if she was greased.

I was up at 6 the next morning and found it raining heavily. All the forenoon we passed through exceedingly heavy showers. The rain drove under the awning more or less, so I put on a rubber coat and wondered if friends at home would believe how cool it was at midday directly on the equator.

We passed Santarem that afternoon, and got a good view of the sandy beach in front of the town, its big white church, and its little one-story houses with blue fronts and red roofs. We also saw the Wireless station—the “deaf and dumb wireless” as the captain graphically described it. The Tapajós river enters the Amazon opposite Santarem, and as it is not as muddy as the latter, it shows the same line of black water as does the Rio Negro, although in lesser degree.

WICKHAM AND SANTAREM.

It is a good thing to remember that Santarem is the place where Wickham, back in 1871 or '72 or '73 was installing a small rubber plantation and watching for Opportunity. Luckily for the planters in the Far East it came, when the big British steamer *Amazonas*, without cargo and without supplies to buy one, hove

in sight. Wickham, practically penniless, chartered it for the Indian government, stored baskets of *Hevea* seeds in its huge hold, won hasty clearance from Pará for “rare botanic specimens,” and got the seeds to the Kew Gardens alive and vital. Every *Hevea* tree in the Far East and thousands in other parts of the world are a direct result of that act.

The British planters should erect a splendid monument at Santarem in honor of Wickham, but they will never do it—with the consent of the Brazilians.

One night a boat of our own line saluted us in passing, showing a flare which burned green for three minutes, then shot up three white balls, lighting up the yellow waters and the black



THE CASIQUIARE RIVER AND ITS OUTLET.

most weirdly. When we reached the place where the German boat had grounded, although it was broad daylight, it rained so heavily that one could not see a boat's length ahead. The pilot knew where we were, but he also knew what the river could do in the way of making new channels and obliterating old ones, so we anchored until it cleared.

The next morning at 6 o'clock we were about twenty miles from the beginning of the "narrows." About 8 o'clock we were off Garupa, where there is quite a settlement. Here the current was not as strong, the shore began to be fringed with palms, and it grew much warmer. We began to see rubber trees, huts or stilts, and banks awash at the river's edge.

We thought we had been through heavy rains. But the shower than came driving up through the narrows so far outclassed any former experience that we decided we hadn't really known what rain was. It passed after time, however, and we went on. The captain and I had tea and toast, standing up to take it, for there was no dry place to sit, even on that awning shaded deck. At 4.30 we passed through Furo Grande, casting the lead every few feet, as many boats go aground here. We got through without mishap, however, and turned in at 8.30 that night, with the assurance that we would be in Pará at dawn.

AGAIN AT PARÁ.

The morning of our arrival at Pará we were up at 5.30, sighting the islands of the city an hour later. By 9 o'clock we had breakfast, successfully passed the doctor and the customs, and, entering the launch which friends had sent off, went ashore.

To my surprise and pleasure I found that the rubber importers and merchants had arranged that I should be their guest while I stayed in the city, as well as at a banquet to be given that night at Café La Paz.

The story of that banquet, speeches, music, menu, and all, has already been told in the pages of THE INDIA RUBBER WORLD by our regular correspondent, and I am not going to inflict upon the reader a repetition of the perfect details. I hold myself guiltless, however, for having a mental reservation as to verbal description of this function, wherever and whenever it may seem fitting. For I am proud and delighted every time I think of it.

After the banquet I spent the night at the home of a Brazilian friend; then, the next morning, starting early, went to the steamship office, where a score of friends had gathered to say good bye. A little later, boarding a launch, I returned to my steamer and we were soon *en route* for Barbados.

It was then that I met the Peruvian physician, of whom I have spoken, who was very ill of *beriberi* and was seeking the salt water, which is said to be a sure cure. He scouted the generally accepted theory that the disease comes from eating polished rice, declaring that no one as yet had any idea of its cause.

In case any reader needs the services of this very skillful

physician in Iquitos, his charges are 3 arrobas* of rubber for an ordinary prescription and 25 arrobas for an operation, 10 per cent. to be added for shrinkage of the rubber.

The Peruvian doctor, by the way, told me of a young American in Pará, who bought a motor car called the "Reo." He was proud of it and proud of the name Reo that appeared in gilt letters on the radiator. He also speeded the machine very rapidly. The courtly Brazilians named him The Reo, some in all honesty and others with a smile of appreciation. He was much flattered until, one day, in brushing up his Portuguese, he discovered that the word meant Criminal.

As we passed down the Tocantins the captain pointed out a dozen places with broad sandy beaches and fairly high land, that were constantly cooled by the trade winds, where in his judgment Pará should have been located.

By 4 that afternoon only one shore was in sight. The water was turning from a muddy yellow to a tawny green and the ocean swell began to be felt. We left the mouth of the river just at sunset and two hours later were fascinated by the wonderful spectacle of a tropical phosphorescent sea. As the boat plowed through the water, broad streamers of star sparkles undulated on each side and trailed for hundreds of yards astern. Every breaking wave to the far horizon was an island of white fire. So bright were these myriad lights that we had difficulty

in recognizing Salinas light, and were only sure of it by its yellow color.

Soon we picked up the pilot boat and watched with interest the half hour struggle of the man in her little tender to get alongside and take off our pilot. Finally, by making a low jump, he landed sprawling in the boat; then we turned in and slept soundly.

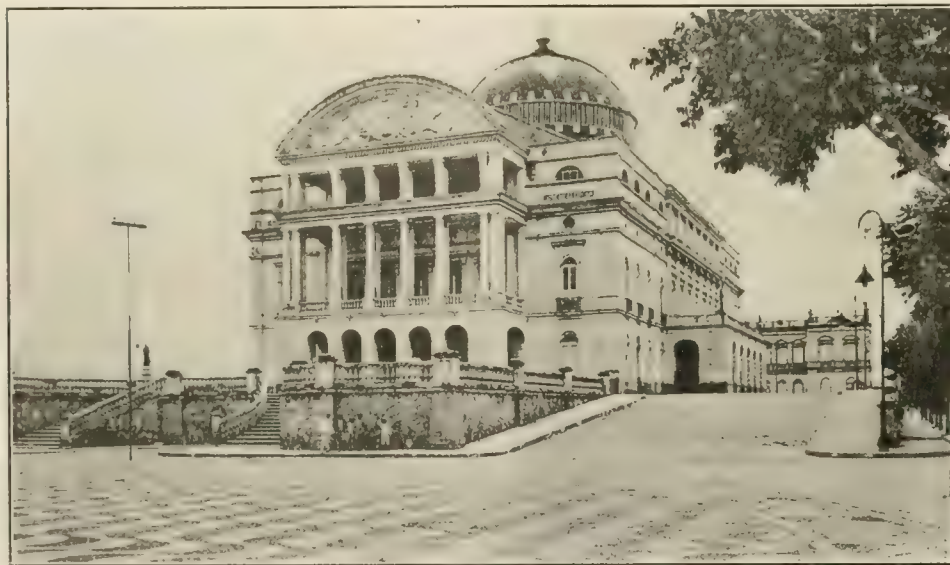
AND THEN ON
THE ATLANTIC.

The next day

we found the great current that sweeps northward up the coast of South America and which all navigators seek in going north but avoid in going south. The day was clear and bright, with a strong breeze on our quarter. The big freighter, almost flat-bottomed, with no bilge keels, wallowed and rolled incessantly but pushed steadily forward.

Fresh from the smooth waters of the Amazon and somewhat enervated by the heat, captain, officers, crew and passengers were all qualmish and sometimes frankly sick. Salines and fruit salts were abundantly in evidence. In 24 hours, however, all had recovered and were very proud that our ancient ark has made 237 miles. The next day it was 281, and the day following exactly the same. Directly after that we were being interviewed by a brisk young physician in the roadstead off Bridgeton, Barbados; were given a clean bill of health, not even being put under observation, and our \$50 deposit given back to us. Then we got in the "Lilywhite," were rowed ashore, and the tropical part of the (Brazilian) journey was finished.

* One *aroba*—about 32½ pounds in Brazil.
[THE END.]



THEATRO AMAZONAS (THE STATE THEATER) AT MANAOS, ON THE UPPER AMAZON.

The India-Rubber Trade in Great Britain.

by Our Regular Correspondent.

IT goes without saying that the fall in price of raw rubber during July and August proved very welcome to the trade whatever may have been the case with investors and company promoters. Although in some cases reductions in the price of goods have been made, this is by no means general.

STATE OF TRADE.

There is plenty of rubber yet to arrive at the factories bought at 2 or 3 shillings a pound more than the price of today. A fact which buyers of rubber goods do not always recognize is that rubber manufacturers do not carry their business from hand to mouth, but are bound to buy far forward delivery, to a great extent at any rate. Another point is that when prices are raised by the manufacturers this rarely occurs until profits have been considerably curtailed, so it is only reasonable that a corresponding time should elapse before notices of reduction in price are sent out to customers. Of course the price of rubber is still high enough to curtail consumption and there is little doubt that a further drop of a shilling or two would result in a considerably increased demand for goods.

It is not only the man who wants a new macintosh who has decided to wait for a fall in price; such large and important customers as the government department have sent out their orders as sparingly as possible. Considering all the circumstances it is somewhat surprising that the reports of such manufacturing companies as publish their accounts have been so satisfactory. In referring to this in conversation recently with the general manager of an important factory, he said it was true that they had maintained their dividend, but that this had only been possible by the most strenuous application to business. He personally had had the hardest time of his thirty years' experience, nearly every order having to be carefully gone into and calculated and re-calculated times without number.

To touch on another matter, though of course one cannot say what will happen to the raw rubber market next year, those firms who have contracted to purchase plantation fine at 12 shillings per pound for 1911 delivery, must feel in rather an awkward position. On the contrary, it is not surprising that the plantation companies whose output has been sold a year ahead at 12 shillings are congratulating themselves all the more since the fall in value below the Brazilian product.

THE preliminary announcements in the press concerning one of the latest synthetic rubber are of the familiar type. There is

ARTIFICIAL RUBBER AGAIN.

the usual chemist who has suddenly discovered how to make the real thing, years of trials and disappointments, and the usual company with a large capital is shortly to be formed to exploit the invention. It was announced in June that a company was to be formed in Liverpool with a capital of £250,000 to put this latest synthetic rubber on the market, the producing price being a fraction over one shilling per pound. I don't say that there is nothing in it; that may be the usual feature, for all I know. Though I have not yet seen a sample, I hear that it is being closely examined by chemists in rubber factories, and that chairmen of rubber planting companies are making anxious enquiries about it.

I FOUND time the other day when in North Wales to look in at the Meadow Mills, Holywell, where Mr. Eyre has for some years carried on the business of washing low grade rubber for the trade. Mr. Eyre's experience in this business goes back about thirty years, he having been established in Liverpool many years before the removal to the present more commodious

RUBBER WASHING.

premises was effected. Considerable additions have been made to the plant in the last year, and the output of washed rubber has been largely increased. Mr. Eyre is quite an enthusiast on the subject of rubber washing, and the plant in use at his works has been specially designed by him to effect complete cleansing of the rubber without causing any deterioration. Holywell, I may say, has long had a great reputation for the healing powers of the holy well, to which pilgrimages are made by the afflicted. To a large extent the water supply of the Meadow Mills is derived from the same spring, though whether it has any particular beneficial effect upon refractory low grade rubber I am unable to say.

THE Rubber Refining Syndicate, Limited, with a capital of £10,000, has been formed with the object of purifying and cleansing rubber for the trade. The expression "washing" does not occur in its objects, and probably this has been purposely left out, so that no confusion can arise with a large company already referred to in these notes as having been formed for what is really the same purpose.

SOME NEW REGISTRATIONS.

Another company of interest is the Hazel Grove Rubber Co., Limited, with a capital of £50,000, to carry on the business of manufacturers of and dealers in rubber goods, etc., and to adopt an agreement with T. Gare and the Gare Patent Tyre and Wheel Co., Limited. The registered office is at 5, Castle street, Liverpool, and presently the business will be carried on at Hazel Grove, which is a mile or two from Stockport. This is where the Gare reforming patents have been worked for the last three years on a modest scale. I am not in possession of the terms of the agreement referred to, but I may remark that the Gare reforming patent is in the possession of the Simplex Rubber Co., of Willerden, of which company Mr. Parker Smith is the chairman.

The Premier Reforming Co. is forming a subsidiary company with a capital of £150,000, to work the six northern counties. I don't quite know why counties should be worked in this manner, unless the main idea is to save distance in sending scrap rubber to be reformed. In the counties referred to rubber manufacturing is only carried on in Lancashire, the Yorkshire business being on a very small scale outside the card clothing branch. The Premier company is certainly losing no time in getting itself established, though I have heard prominent men in the rubber trade suggest that the new flotation might as well have been deferred until the parent company had paid a dividend.

The Greenwich Rubber Recovery Co., Limited, with a capital of £3,000, has been formed to acquire the premises and effects of the Surrey Tyre Co., at Pelton road, East Greenwich. I may say that the Surrey company has long ceased to do any business, and the premises have for six or seven years been occupied by Mr. R. R. Gubbins, for working his patents in connection with scrap rubber, and more particularly with removing wire from armored and embedded hose, like a good many other patents, Mrs. Gubbins—who is a young man, was an officer in the army—allowed himself to be engrossed more by details of mechanism and the possibilities of improvement than by strict attention to the economical side of the business. He has now no connection with the company, which is in possession of his patents, which I understand are to be worked in conjunction with a secret process of Mr. W. McCowan, a director of the new concern.

A new company has recently been formed at Warrington to manufacture a substitute for rubber, especially for use in the insulation of cables. The invention is said to be due to a German

chemist who has been closely concerned with bringing synthetic indigo to a commercial success. The new company is financially backed by Messrs. Siemens, the British Insulated and Helsby Cable Co., and others, and it may, therefore, be taken that the discovery is of considerable importance.

Although I have heard this product referred to as synthetic rubber, I believe that this is not a correct appellation. Various bodies have had a successful application for insulating purposes which by no means exhibit the principal characteristics of rubber; for instance, "diatrine" and "gutta gentach," to say nothing of the vulcanized bitumen used by Callenders.

ANOTHER patent for this purpose has been taken out by Dr. Dreyfus, Dr. Friedl, and Dr. Bentley, the first named being the

REMOVING RESIN FROM RUBBER.

managing director and the others chemists of the Clayton Aniline Co.

This company which is located in a suburb of Manchester, carries on tar distillation and aniline color manufacture, and is well known to the rubber trade as suppliers of solvent naphtha. The main feature of the patent is the removal of resins from rubber by the use of hydride or a higher base, the extraction being made on the rubber while still containing its usual moisture, this water preventing the pyridine from dissolving the rubber. I don't quite see where the particular advantage of using coal tar bases for this purpose comes in, unless it is that the patentees have an excess of the solvent for which they desire a market. They do not entirely limit their claim to pyridine bases, but include mixtures of these with the old established solvents, such as alcohol and acetone.

With regard to the use of coal tar bases I may remark that they were the particular solvent referred to in Robinson Brothers & Cliff's patent of six or seven years ago. In this case the solvent was used to dissolve rubber scrap in a reclaiming process. After considerable experimenting the patent was abandoned, one of the objections to the product being the disagreeable smell the pyridine gave to the rubber. Messrs. Robinson Brothers are large tar distillers and naphtha producers, and located at West Bromwich, and elsewhere, and they are anxious to find a use for the higher pyridine bases which they produce as a necessary by-product in a certain branch of their manufacture. I have no information whether the Clayton Aniline Co. are actuated by any such motive, and I am quite open to conviction that the coal tar bases have been selected for this particular purpose because of their intrinsic merits. The patentees refer to the pronounced rubber dissolving properties of pyridine and its bases. It will be remembered that pyridine was adopted by Weber in rubber analysis to remove pitch and asphalt from vulcanized rubber, though someone later on showed that vulcanized rubber was soluble in it to an appreciable extent.

MR. WILLIAM COULTER has recently taken up an appointment with the works of The B. F. Goodrich Co., in America, thus

PERSONAL MENTION.

adding another country to the list of those where he has had experience of rubber manufacturing. In England he was for a time at the original Leyland works, then at Charles Macintosh & Co. France and Russia subsequently engaged his services, and in more recent years he has been with the Harburg-Vienna Co., at Harburg and Wimpasing, proceeding from thence to the Hungarian Rubber Co., at Budapest. Mr. Coulter, who is a bachelor, is evidently of somewhat nomadic habits, to whom an engagement for a limited period appeals more strongly than it would to a family man. Waterproof textures and elastic thread are branches of the rubber trade in which Mr. Coulter specializes.

I regretfully have to record the sudden death of Mr. Lewis Johnstone, B. SC., an Edinburgh man who had been for many years in the Manchester district connected with the now defunct Radax tire. Of late years Mr. Johnstone had devoted himself to the perfecting of a motor tire for which he took out

one or two patents. For some time past he had been engaged on this tire at the well known Helsby Cable works, and this company is now the owner of his patents upon which their new tire department is founded.

Mr. J. A. Fallows, who was for many years manager of the Manchester offices of the Leyland and Birmingham Rubber Co., is now the general manager of the works at Leyland. Mr. Fallows was at the Brussels exhibition when the disastrous fire broke out. The fine exhibit of the Leyland company, in connection with that of the Falatine Heel Co., and others, was completely destroyed.

In the personal mention of my August notes Earl of Verulam should of course have been Earl of Verulam—Verulamium having been the Roman name for St. Albans.

LONDON RUBBER EXHIBITION.

THE Brazilian section at the second International Rubber Allied Trades Exhibition, in London next year, is likely to exceed in extent and interest the very excellent representation made at last year's exhibition by the Commercial Association of Amazonas at Manáos. From the latest number received of the *Revista* of that association it appears that the invitation of the management of the Rubber Exhibition to the Manáos association to be represented next year was received with enthusiasm, and that steps have been taken already to make the Amazon exhibit as complete and fully representative as possible. Circulars have been addressed to the producers of rubber, inviting their co-operation, and to the officers of the various municipalities asking them to encourage the movement. Exhibits are invited of all kinds of rubber produced in the Amazon region, including balata. A requisition has been made for space in the coming exhibition equal to 100 square meters [= 1,076 square feet]. The governor of Amazonas, Senhor Colonel Antonio Bittencourt, has been named as one of the vice-presidents of the Rubber Exhibition.

The management of the Rubber Exhibition have received from the Booth Steamship Co., Limited, a letter intimating that they will be prepared to carry free of charge all exhibits of rubber from the Amazon valley, including any from Iquitos (Peru), as well as from Maranhão and Ceará, on the south Brazil coast.

At the recent annual meeting of the United Planters' Association of Southern India it was resolved:

"That this association do decide to support the Rubber Exhibition of 1911 to be held in London; that the Secretary be asked to arrange for space at the International Rubber Exhibition either by letter or by cable; that Mr. Richardson be requested to be our delegate; that a committee be formed to undertake all the necessary arrangements in connection with the exhibition, and that the association be indemnified against loss by the delegates of those associations largely interested in rubber."

The *India-Rubber Journal* (London) says: "Mr. Henry C. Pearson, Editor of THE INDIA RUBBER WORLD, New York, is presenting a cup valued at 100 guineas for the best system for extracting a maximum amount of latex from the *Castilloa elastica* at a minimum cost. The cup is intended to be competed for at the Rubber Exhibition next year."

The Ceylon chamber of commerce, in conjunction with the Planters' Association of Ceylon, are in favor of Ceylon being fittingly represented at the Rubber Exhibition, and it is proposed to ask the colonial government for a substantial grant to meet the whole cost of the representation.

THE United States-Mexico Rubber Plantation Co. have been organized at Fort Collins, Colorado, under the laws of Arizona and Mexico, to develop 5,000 acres of land, which has been acquired on the river Usamacinta, near Monte Cristo, Mexico. It is proposed to plant *Castilloa* rubber largely with other crops for earlier profits, the capital to be secured by selling acreage certificates. The directors and officers of the company are leading business men in Fort Collins, Denver.

Recent Patents Relating to Rubber.

UNITED STATES OF AMERICA.

ISSUED AUGUST 2, 1910.

- N**O. 965,847. Vehicle wheel rim. [For pneumatic tires.] J. M. Alderfer, Sharon Center, Ohio.
 965,922. Resilient tire. E. B. Méricoux, Paris, France.
 965,998. Hose coupling. T. Evans, Centralia, Wash.
 966,031. Process of making cushion vehicle tires. J. A. MacMillan Co., Dayton, Ohio.
 966,133. Stair nosing and the like. G. B. Staples, Philadelphia.
 966,102. Tire repair vulcanizing device. J. A. Blanchard, assignor of one-half to A. L. Blanchard, both of Norfolk Downs, Mass.
 966,385. Recovery of rubber. [Relates to the removal of resins for guayule.] M. Delafond, Mexico City, Mexico.

Trade Mark.

- 49,178. Rutherford Rubber Co., Rutherford, N. J. The symbol £ for "Sterling" rubber tires and rubber tubing.

ISSUED AUGUST 9, 1910.

- 966,438. Tire armor. H. A. Gamble, assignor of one fourth to J. H. Murch, Jr., both of San Francisco.
 966,504. Valve operating hose reel. I. E. Williams, Valley View, Pa.
 966,674. Elastic vehicle tire. W. H. Eynon, Cleveland, Ohio.
 966,748. Combined stopper and connection for water bottles. J. J. Honecker, Cleveland, Ohio.
 966,774. Wheel protector. F. W. Savage, Granville, N. Y.
 966,925. Hose coupling. H. E. Kittredge, Boston.
 967,004. Knee cushion. H. Ehlkian, Fresno, Cal.
 967,064. Boot and shoe. F. W. Savage, Granville, N. Y.
 967,065. Cushion tire for vehicle wheels. L. L. Savoie, New Orleans, La.
 967,115. Means for locking detachable dangles on demountable rims. A. Dow, assignor to Dow Rim Co., all of New York city.
 967,125. Syringe. [Vaginal.] J. H. Huppert, Pittsburgh, Pa.

ISSUED AUGUST 10, 1910.

- 967,249. Spring tire for wheels. [With cushion tire.] S. A. Schewczik, Vienna, Austria.
 967,269. Surgical appliance. S. G. Tibbs, Akron, Ohio.
 967,370. Belting. J. W. Hilton, Bellevue, Ky.
 967,392. Packing. J. C. Kingsbury, Dudley, Mass.
 967,457. Tire armor. P. M. Stephan, San Francisco.
 967,506. Vehicle tire. [Cushion.] E. W. Evans and P. J. Evans, Waltham, Mass.
 967,585. Compressive hose. W. J. Luebel, Stuttgart, Germany.
 967,643. Vehicle tire. [Cushion.] J. A. Keller, assignor to L. Shubert, both of New York city.
 967,679. Hose coupling. W. H. Shephard, Portsmouth, Va.
 967,704. Tire protector. J. A. Bailey and C. E. Parkitt, Willows, Cal.
 967,707. Anti skid tire and stud therefor. C. S. Beebe, assignor to L. J. Elliott, both of Racine, Wis.
 967,751. Manufacture and repair of india-rubber goods. [From waste rubber.] T. Gare, New Brighton, England.
 967,796. Fire hose carrier and spanner. R. Lovell, San Diego, Cal.
 967,840. Tire shield. H. E. D. Meyer, New York city.

Trade Mark.

- 45,826. The New York Mackintosh Co., New York City. The fanciful picture of a child in a storm cape. [See THE INDIA RUBBER WORLD, September 1, 1910—page 432.] For waterproof clothing.

ISSUED AUGUST 23, 1910.

- 967,887. Resilient wheel. J. G. Daw, Wellfield, Lancely, England.
 967,901. Hose. [Relates to a fastening or joint for fire hose.] E. T. Greenfield, Kianesha, N. Y.
 967,946. Combination eraser and pencil sharpener. C. H. Marshall, assignor to G. D. Kirtland, both of Syracuse, N. Y.
 967,979. Tire protector. W. E. Sampson, Grand Island, Neb.
 967,982. Method for treating the interior surfaces of molds. A. A. Schmidt, Chicago.
 968,069. Tire. [With bars for holding it in place.] L. M. Nelson, Pennington, N. J., assignor to Nelson Tire Co., a corporation of Wyoming.
 968,086. Tire armor. F. H. Schlenker, Dunkirk, N. Y.
 968,105. Overshoe retainer. P. K. Young, Omaha, Neb.
 968,184. Tire protector. D. D. Murray, assignor of one-eighth to N. S. Stalker, both of Duluth, Minn.
 968,414. Anti skidding and traction device for automobile and other wheels. W. Reagan, Philadelphia.
 968,415. Anti skidding and traction device for automobile wheels. Same.
 968,416. Anti skidding device. Same.
 968,446. Tire fastening device. R. S. Bryant, Columbus, Ohio, assignor to the United Rim Co., Akron, Ohio.

Trade Mark.

- 41,557. Boston Rubber Shoe Co., Boston. The word *Hub*. For rubber boots and shoes and rubber shoe soles.

ISSUED AUGUST 30, 1910.

- 968,607. Pneumatic pad or horse collars. W. A. Skillman, Springfield, S. D.

- 968,706. Tire protector and tread grip. A. C. Smith and S. W. Smith, Albion, Ill.
 968,777. Automobile tire. C. A. Lieb, New York city.
 968,880. Demountable tire rim. A. Paul, assignor to Alderwerke vorm. Heinrich Kleyer A.-G., both Frankfort o/Main, Germany.
 968,941. Vehicle tire. J. E. Harrison, New York city.
 968,980. Non puncturable tire. C. R. Rawdon, St. Louis, Mo.
 969,019. Hose coupling. E. H. Wilson and S. J. Gallagher, Coalings, Cal.
 969,077. Cushion tire. T. Purcell, Roanoke, Va.
 969,100. Machine for reducing vulcanized rubber to powder. T. Gare, New Brighton, England.
 969,131. Method of making rubber tires. H. Z. Cobb, Malden, Mass.

[NOTE.—Printed copies of specifications of United States patents may be obtained from THE INDIA RUBBER WORLD office at 10 cents each, postpaid.]

GREAT BRITAIN AND IRELAND.

PATENT SPECIFICATIONS PUBLISHED.

The number given is that assigned to the Patent at the filing of the application, which in the case of these listed below was in 1909.

[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, AUGUST 4, 1910.]

- *8,398 (1909). Hoof pad. A. E. Alexander, London. (A. G. Uptegraff, Lenox, Massachusetts.)
 8,506 (1909). Elastic tire formed of india-rubber balls and cups adjustable upon bolts secured to a flexible rim of steel strips. J. R. Amigó, Barcelona, Spain.
 *8,713 (1909). Sheet packing for pipe joints. Finely divided iron mixed with rubber solution is worked into a foundation of open mesh woven asbestos. V. Tompkins, Jersey City, New Jersey.
 8,760 (1909). Football valve. E. Schmidt, Leipzig, Germany.
 *8,763 (1909). Fabric for tires and rubber hose and belting. E. D. C. Ely and F. A. Subers, Cleveland, Ohio.
 8,908 (1909). Athletic boot sole. H. W. Brown, Glasgow, Scotland.

[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, AUG. 11, 1910.]

- 9,064 (1909). Extraction of rubber from plants, by mechanical means. L. Guignet, Lyon-Villeurbanne, France.
 9,093 (1909). Lubrication of rubber windings of golf balls. R. F. Hutchison, Prestwich, and R. Milne, Lenzie.
 9,185 (1909). Tire with air tube enclosed in a cover. F. S. Willoughby and two others, Manchester.
 *9,213 (1909). Hoof pad. G. Loeffler, Tampa, Florida.
 9,284 (1909). Waste rubber manufactured without grinding or cutting up into pieces, by cutting it to the size of the new article required and reheating in a mold under pressure. H. Markus, Salford.
 *9,432 (1909). Packing consisting of flexible metal ring pressed on to the rod by rubber backing. J. M. Rhodes, Memphis, Tennessee, and J. N. Whittenberg, Monterey, Mexico.

[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, AUGUST 17, 1910.]

- 9,527 (1909). Sole and heel protector. A. Tullett, Birmingham.
 9,528 (1909). Sole and heel protector. A. Tullett, Birmingham.
 9,542 (1909). Flooring and stair tread. C. L. Cuthbe, London.
 9,544 (1909). Cushion tire. J. B. Aillot, Monceau-les-Mines, France. [Void.]
 *9,560 (1909). Catamenial pouch. F. A. Frommann, St. Louis, Missouri.
 9,583 (1909). Tire comprising an outer band of hard rubber resting on an inner band of soft rubber. J. A. Faesen, Hilversum, Holland, and two others.

- *9,699 (1909). Hoof pad. M. Kane, Cincinnati, Ohio.
 9,838 (1909). Stop for leaks in fire hose and like tubes. G. W. Sturgess, Leicester.
 9,852 (1909). In disk wheels composed entirely of rubber the rubber is made of gradually increasing hardness from the tread to the center of the wheel. L. A. van Rijn, Singapore.

[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, AUGUST 24, 1910.]

- 10,086 (1909). Detachable tire rim. A. Latimer, London.
 10,127 (1909). Spring wheel with pneumatic tire. R. C. Wilford, Garforth, Leeds.
 10,330 (1909). Heel protector. H. W. Smart, West Ealing, and two others.
 10,371 (1909). Non skid stud for tires and horse shoes. J. H. Holmes-Dodd, London.

[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, AUGUST 31, 1910.]

- 10,581 (1909). Mold for golf balls. G. H. Murphy, Catford, and C. B. Bernard, Lee, Kent.
 10,596 (1909). Non skid device for motor vehicles. L. Sterne, London. (J. E. Blandy, Funchal, Madeira.)
 10,645 (1909). Machine for manufacturing rubbered cord for tire covers. T. Sloper, Devizes, Wiltshire.
 10,710 (1909). Tire rim with detachable side flange. A. F. Lange, London.
 10,733 (1909). Solid rubber tire with a circumferential aperture in which is compressed an endless helical spring. E. J. Duff, Liverpool.
 10,737 (1909). Pneumatic tire with studded tread. L. I. Perry, London.
 10,750 (1909). Solid rubber tire perforated to receive inflated balls. E. J. Hurley, London.

shares have been pushed up briskly this summer, and they now stand at a higher level than ever before."

THE FRENCH REPUBLIC.

412,700 (Feb. 15, 1910). W. K. L. Dickson. Latex rendered waterproof with the aid of balata.

412,701 (Feb. 15, 1910). Alphonse Joseph Metzler and Co. Process of manufacturing balloon fabrics.

412,702 (Feb. 15, 1910). Joseph and P. Miquel. Process of making elastic tissues.

412,703 (Feb. 15, 1910). Helsingborg Gummitrucks Aktiebolaget. Manufacture of hollow rubber balls.

412,703. (Feb. 16). J. Bieneck. Multiple pneumatic tire.

412,745 (Feb. 17). J. Neff, Sr. Pneumatic tire.

412,757 (Feb. 19). L. G. Letton. Pneumatic tire cover.

412,902 (Feb. 21). E. Balazs. Pneumatic tire tread.

413,016 (Feb. 24). S. E. Richardson and R. Price. Pneumatic tire protector.

413,064 (Feb. 26). A. Metz. Pneumatic tire protector.

413,073 (Feb. 26). Rove and L'Huilher. Machine for the manufacture of tire envelopes.

413,118 (Jan. 24). R. W. Cater and G. Schotfield. Tool for tapping rubber trees.

413,128 (Feb. 2). Gummiwaarenfabrik S. Herz. Process for the manufacture of tire envelopes.

413,190 (March 1). S. Balliani. Demountable pneumatic tire.

413,219 (March 2). W. N. Booth. Improvement in the manufacture of demountable tires.

413,220 (March 2). P. Orange. Manufacture of artificial flower stems.

413,230 (March 2). Continental-Cautouchou, und Gutta-Percha-Compagnie. Auxiliary tires for automobiles.

413,242 (March 3). de Lostalot. Pneumatic tread for bicycles.

413,292 (March 5). L. Salvatuo. Protective tread for tires.

413,345 (March 7). C. Zuche. Process for the manufacture of cycle tires.

413,346 (March 7). C. de B. Zampa. Pneumatic tire protector.

413,575 (March 12). A. Spencer. Pneumatic tire.

413,699 (March 17). C. J. Bailey. Pneumatic tire tread.

GERMAN ELECTRICAL PROGRESS.

"Another section of industry that has promoted the boom in shares is the electrical trade. This industry is doing a splendid business, and its prospects for future work and development are bright. The Bavarian Legislature has recently passed a law authorizing the development of an immense water power in the mountains above Munich, and a company has just been organized to develop a huge water power on the Rhine between the Duchy of Baden and upper Alsace. German companies are also interested in new power plants now in course of construction above Basle. One of the big Berlin electrical companies has recently contracted to establish a power plant at Saarbrücken.

"This same company, the Allgemeine Elektrizitäts-Gesellschaft, is also about to bring a new electric lamp upon the market which promises to eclipse the older kinds of arc lights. The Allgemeine controls the Gesellschaft für Elektrische Unternehmungen at Zurich, and that company has recently taken steps to absorb the Lahmeyer concern of Frankfort, another big electrical establishment. This amalgamation is another important step toward the elimination of competition in the German electrical industry, as well as toward a sharper fight for foreign business.

"For the first half of the year the exports of electrical goods amounted to \$24,000,000, against \$19,475,000 for the first half of 1909. A number of establishments for separating nitrogen from the atmosphere by electrical processes are in course of construction in Germany, and in other countries, with German capital. Next year such a plant with 120,000 horsepower will be completed at the Rjukan waterfall in Norway. In view of all these promising features of the industry, the prices of electrical

THE United States consul-general at Singapore suggests that the oil of seeds of *Hevea Brasiliensis* will ultimately be of great commercial value. He recalls that it was a long time before the oil of cotton seeds became a valuable commercial factor. The consul general (Mr. DuBois) reports that at present there is such a demand for the seeds of *Hevea* for planting that the supply is not sufficient. It is now suggested by experts, however, that in erecting machinery on new rubber plantations the plans should be made with a view to rubber seed crushing machines being included later. This would leave a residue on the estates which it is believed will prove good for cattle food, as well as a fertilizer for rubber trees. [United States *Daily Consular and Trade Reports*, September 13, 1910.]

At a recent meeting of the United Planters' Association of South India, Mr. R. D. Anstead mentioned that a large number of the Pará rubber trees planted in that country are already beginning to bear seed, and each year more will do so. It has been estimated that trees after the fifth year will yield 500 seeds each, and the product of 400 trees will weigh a ton. It is stated that the seeds contain about 20 per cent. of an oil which has been valued at \$100 (gold) per ton. Mr. Anstead was of the opinion that the planters should gather the seed, crush it for the oil, and use the residue for fertilizing the rubber plantations.

THE recent high prices of linseed oil, says *Iron Age-Hardware*, has increased the use of adulterants to a considerable extent. But it must be borne in mind that there are no crushers of flaxseed—manufacturers of linseed oil—who adulterate their product. All the adulterating is done by parties who buy the pure oil. Small jobbers are mentioned as taking oil from a barrel and replacing it with benzine or kerosene. Cotton seed, corn and soya bean oils are also used as adulterants. It is estimated that from 15 to 20 per cent. of the linseed oil now being sold is adulterated. There are possibly few innocent purchasers of adulterated linseed oil. The inducement of a price lower than at which pure oil is sold is necessary to sell the "doped" stuff.

LOWER PROFITS OF LINSEED OIL.

At the annual meeting of shareholders of the American Linseed Co., in New York, on September 13, the reports for the fiscal year ended July 31 showed net profits of \$720,952, against \$979,600 for the preceding year. Profits equaled 4.3 per cent. on \$16,750,000 preferred stock, compared with 5.85 per cent. earned on the same stock in the previous year. The reduced earnings are attributed to the smaller crop of flaxseed in the United States, and the consequent higher price of seeds. The company are working to develop a wider interest in flaxseed culture among American farmers.

ONE WEAK SPOT.—"You ought to have your car equipped with demountable rims," said an automobile man to Richard C. Jenkinson, the other day. "All you have to do is carry an extra rim with inflated tire. In case of a puncture it can be easily attached by a twelve-year-old child in two minutes."

"Yes," said Mr. Jenkinson, "but the trouble is always to find the twelve-year-old child."—*Newark News*.

DURING the crop year 1909-10 the Cicely Rubber Estates, Limited, obtained 60,000 pounds of *Hevea* rubber from 10,000 trees, or an average of 6 pounds per tree. The average yield was 1.35 pounds in 1905-06; 2.37 pounds in 1906-07; and 4.25 pounds in 1907-08.

Points on the Cotton Situation.

THE UNITED STATES AS A COTTON COUNTRY.

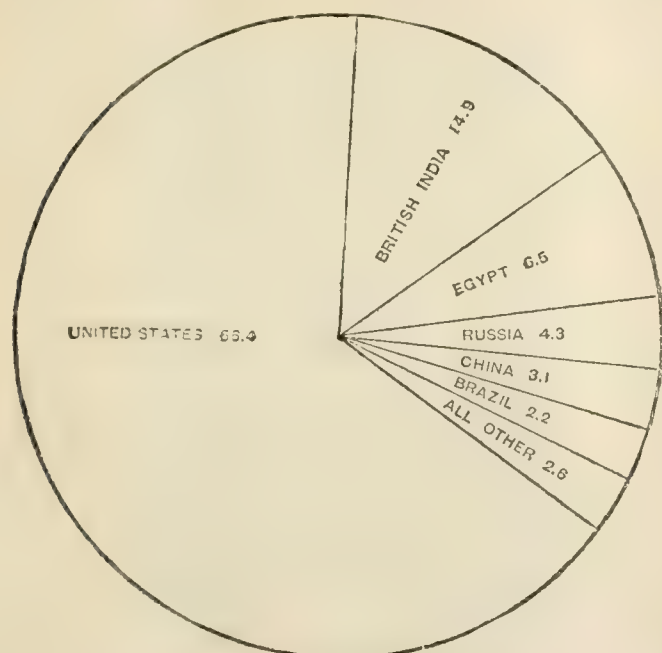
IT is an interesting fact that, whereas the use of cotton antedates history, and so much cotton had been produced elsewhere before the settlement of America, the growth of this product has latterly become more important in the United States than in any other country, or in the rest of the world besides. In view of the high price of raw cotton, which shows no indication of early decline, the increased production of this commodity abroad would be welcomed by the manufacturers of the United States, as tending to reduce the cost of the material required by domestic spinners.

This journal from time to time has recorded the efforts in various other countries to promote the growth of cotton, and while a certain amount of encouragement has been evident, the United States continues in the lead in the growth of cotton. In a Bulletin of the United States census bureau at Washington appear some diagrams illustrating the mass of figures in the shape of cotton statistics, which are presented here as showing at a glance the importance of this country as a source of the world's cotton supply. It is not enough that portions of Africa

years ago for the purpose of promoting the culture of cotton throughout the British Empire, was planned to operate with a capitalization of £500,000 [=\$2,433,250]. At last accounts the amount subscribed had reached £460,000. The association has been active from the beginning in promoting the growth of cotton, particularly in West Africa, where encouraging results have been obtained. They have been stimulated to activity by the high cost of cotton generally, which has entailed hardships upon the industry in Lancashire and unsettled British industrial conditions.

SUPPLY OF SEA ISLAND COTTON.

THE Sea Island cotton crop for the year ended September 1 is reported by Messrs. John Malloch & Co., of Savannah, Georgia, as somewhat smaller than in the preceding year, though in excess of the recent average. They estimate: For Georgia, 53,124 bales; Florida, 28,711 bales; South Carolina, 14,821; total, 96,656 bales. Estimating 1,800 bales to have been carried over, would make the crop actually grown in 1909-10, 94,856 bales. Comparison for six years:



THE WORLD'S PRODUCTION OF COTTON.

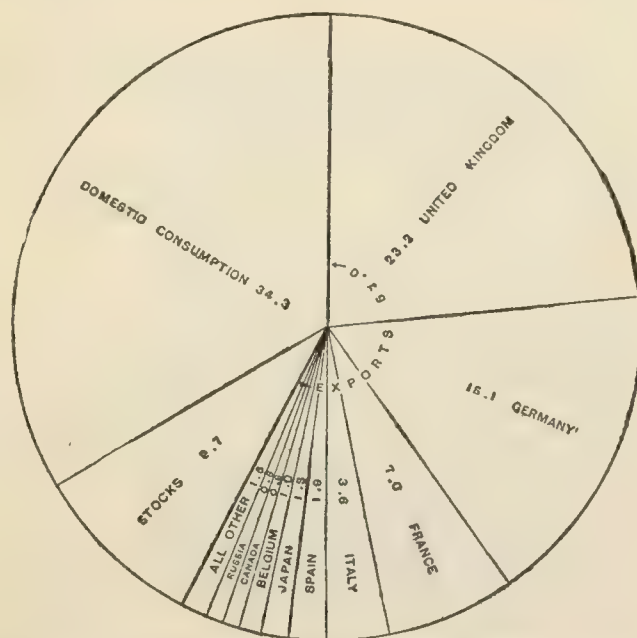
[Proportion of the world's mill supply contributed by each country, growth of 1908.]

should be admirably adapted to the growth of cotton; there is lacking a supply of labor. Nor does it suffice that India is so fully populated; there is lacking there an intelligent class of labor, and, what is more important, intelligent supervision, and systemization of labor organization and the marketing of the product.

It is plain, therefore, that whatever may be the ultimate result of efforts to cultivate cotton in other parts of the world, the United States must for a long time continue to be the chief source of cotton, and that no other country can be looked to to contribute enough to the world's supply to relieve the pressure upon the American supply, and reduce materially current prices of this important textile.

COTTON IN THE BRITISH COLONIES.

THE British Cotton Growing Association, organized several



THE WORLD'S CONSUMPTION OF COTTON.

[Proportion of the supply for 1909 consumed in the United States and in other countries.]

1904-05..... bales	102,191	1907-08..... bales	85,024
1905-06.....	123,789	1908-09.....	101,420
1906-07.....	58,932	1909-10.....	96,656

The shipments for six years has been:

	Domestic Mills.	To Europe.	Total.
1904-05..... bales	63,430	40,017	103,447
1905-06.....	90,909	34,103	125,012
1906-07.....	40,006	19,414	59,420
1907-08.....	52,825	29,685	82,510
1908-09.....	79,446	22,857	102,303
1909-10.....	71,783	25,326	97,109

From the best information available it appears that the coming crop should be about the same as last season, or, with good weather, a little larger. Prices continue high, but the opinion is expressed that if the mills will remain out of the market for a while, the people in the interior will be willing to send in their cotton at lower than the present rates.

The price of "Lacey" Sea Island grades at the beginning of September, 1910, was 32 cents; September, 1909, 22 cents; and September, 1908, 20 cents.

THE number of bales of cotton ginned from the growth of 1910 to September 1, 1910, and comparative statistics to the corresponding date in three years preceding, is reported by the United States census office:

Bales	200,278	1908	1909	1910
	1907.	402,220	388,342	350,824

THE HIGH PRICE OF COTTON GOODS.

At the semi-annual convention of the National Association of Cotton Manufacturers, held at Portsmouth, New Hampshire, beginning on September 15, the opening address by the president, Mr. Franklin W. Hobbs, asserted that in the face of high prices for raw materials and high rates of wages on one hand, and the insistence upon low prices for manufactured products on the other hand, the cotton manufacturing trade during the half year had witnessed troublous times. He intimated that there must be a gradual advance in the prices of products until the manufacturers can make a fair return on the capital invested in the business. Mr. Hobbs pointed out that since the foundation of this association, 50 years ago, it had consistently worked in the direction of improved conditions in the conduct of the cotton trade as a whole, but many reforms remain to be made. For instance, he said:

"On an order for 100 bales, it may vary from 30,000 pounds to 60,000 pounds and yet constitute a good delivery on an order for 100 bales. Is it not time for us to insist that 100 bales of cotton shall mean 50,000 pounds of cotton, and to so specify in our contract and insist on delivery within one per cent. of the weight specified? Thus we would make the weight rather than the number of bales the real basis. When we sell 50,000 pounds of yarn we are expected to deliver that amount—why not buy our cotton in a similar way?"

NEW TRADE PUBLICATIONS.

THE newest catalogue of THE B. F. GOODRICH CO. (Akron, Ohio) is devoted to their Druggists' Rubber Sundries. It is not only artistically got up, but is otherwise perhaps the most complete catalogue of its kind ever published. Touching on a



few of the newest additions and improvements, one finds among the hot water bottles one called the "Marathon," which is unique as to shape, being perfectly elliptical. Another which may be mentioned, the "Gibraltar," is a new cloth insertion article with a truly reinforced seam. The list of fountain and combination syringes is probably the most complete manufactured by any firm. A new and neat feature in connection with these, is the method

of packing. Heretofore the syringe bag had to be doubled over in the box which held it. By the new way, the box is used for displaying as well as carrying. It has a false bottom which slides out and which can be raised like an easel; this shows the bag in full length, with one end slightly raised, and with the appliances alongside of it. This box is paper covered and the color schemes used are very attractive. Another improvement is the new covering for air mattresses, which are made of ticking, and can easily be removed, adding to the cleanliness. They are made especially for hospital use and can be had in the regulation sizes. Small air cushions too are made up in tapestry effect fabrics or in a solid tan color. In the back of the catalogue, ingeniously held by means of a pocket in the cover, is the firm's latest price list. The booklet containing the prices can be removed, if desired. The catalogue may be found of use in the household as well as in the store. [5¾" x 8". 51 pages.]

THE B. F. GOODRICH CO. have just issued the most complete catalogue of Mechanical Rubber Goods which they have yet got out. It is notable for the variety of products described, and for the number of items that are new, or practically so, while the staple lines to which they have devoted their energy for 40 years continue to be listed. No fewer than 55 pages are devoted to Hose, under 36 headings. This department is embellished with 57 illustrations, many of which relate to more than one grade of hose—some of them to a half dozen. The prominence given to paper mill equipment, conveyor belting, and vacuum hose, testify to the growing importance of these newer uses of rubber. Special attention is given to equipment for the beet sugar industry, and the company have taken on the manufacture of interlocking tiling [5¾" x 8". 172 pages.]

W. D. ALLEN MANUFACTURING CO. (Chicago) devote their Circular No. 168 to Lawn Sprinklers for the season of 1911, which shows that they are beginning in good time for next year's trade. It is interesting to notice that they list a number of novelties. [3½" X 6". 32 pages.]

THE UNITED AND GLOBE RUBBER MANUFACTURING COS. (Trenton, New Jersey.) have issued a new catalogue of Mechanical Rubber Goods for the trade generally, which is very complete and concise in style. It is likewise attractive in appearance, being especially well illustrated, and will prove a handy reference book for the company's many customers. [6" x 9¼". 76 pages.]

THE McLEROY BELTING AND HOSE CO. (Elkhart, Indiana) issue a catalogue of their Rubber-It Belting, with testimonials from many users of this company's "4" x 7" 12 pages.]

THE MILLER RUBBER CO. (Akron, Ohio) issue a new catalogue of Druggists' Sundries and Surgical and Miscellaneous Rubber Goods, illustrating attractively a very extensive line, including several novelties of interest. [4½" x 8½". 94 pages.]

NATIONAL INDIA RUBBER CO. (Bristol, Rhode Island) present a catalogue of "National" Packings and Mechanical Rubber Goods, which is the fullest exposition of this branch of their production that the company has yet issued. Though so long established, the National company is thoroughly up to date in the variety of articles which it manufactures, each new catalogue including something not offered before. [6" x 9". 101 pages.]

ALSO RECEIVED.

C. W. HUNT CO., New York.—General Catalogue No. 10. [Conveying and other machinery.] 112 pages.

The Blaisdell Machinery Co., Bradford, Pa.—The Blaisdell System of Vacuum Cleaning. 31 pages.

Blackstone Manufacturing Co., Chicago.—Blackstone Vacuum Massager. 24 pages.

Abbé Engineering Co., New York.—Abbé Ball and Tube Mills. [For grinding or pulverizing many materials, including guayule shrub.] 40 pages.

THE last edition of Ferguson's "Ceylon Handbook" shows Liptons, Limited, to have, on one estate, 700 acres in rubber alone and 304½ acres in tea with rubber interplanted, while another estate has 6,000 rubber trees, the acreage not being stated.

The Obituary Record.

COLONEL GEORGE T. PERKINS.

THE sudden passing away of Colonel George Tod Perkins at his home in Akron, Ohio, on September 8, was an event entirely unlooked for at the beginning of the month, when THE INDIA RUBBER WORLD presented a record of the success of The B. F. Goodrich Co.—on the occasion of the fortieth anniversary of that company—with which Colonel Perkins was actively connected from its beginning. As already stated in these pages, Colonel Perkins invested capital in this business at the start; when the business became a corporation he became a director, continuing as such until his death; and for nearly 20 years he held the office of president, resigning early in 1907 as a step toward narrowing his business activities.

The subject of this sketch was born on May 5, 1836, on "Perkins Hill," Akron, being the son of Colonel Simon Perkins, who has been called the "father of Akron." The mansion which the son built in later years now stands on the same elevation. George

Perkins at greater length appeared in THE INDIA RUBBER WORLD, February 1, 1907 (page 143), and a history of the rubber company September 1, 1910 (page 439).

It may be added that just before the war, Mr. Perkins went to Youngstown, Ohio, where he was connected with the iron business of his uncle, David Tod, who was later governor of Ohio. He was married in 1865 to Miss Mary Rawson, and is survived by their daughter, the wife of Charles B. Raymond, now secretary of The B. F. Goodrich Co.

Funeral services were held at the Raymond residence on September 10, and the body was placed in the family vault in Glendale cemetery. The pall bearers were Bertram G. Work, F. H. Mason, E. C. Shaw, H. E. Raymond, W. A. Means, and P. W. Leavitt, representing The B. F. Goodrich Co., and George D. Bates and L. D. Brown, representing the Second National Bank. Military honors were paid to the deceased by a squad of Grand Army veterans of Buckley Post.

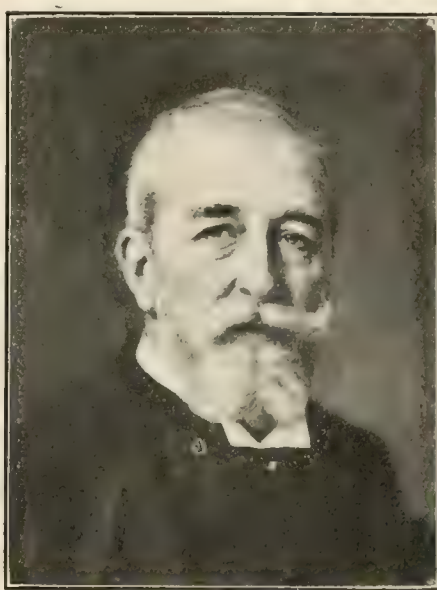


THE LATE GEORGE T. PERKINS.

Perkins was educated in the Public schools at Akron and at Marietta College, in Ohio. The military title which he wore was won during the civil war, during which he saw more than four years of active service, participating in many important battles, and being wounded at Chattanooga.

Colonel Perkins returned home from the war to engage in business, becoming secretary to Taplin, Rice & Co., of Akron. In 1870 he became cashier of the Bank of Akron and in 1876 its president. Twelve years later when this was merged with the Second National Bank of Akron, Colonel Perkins became president of the larger institution, holding the office until March 1, 1904.

Colonel Perkins was among the first to encourage the late Dr. Goodrich to engage in the rubber industry in Akron, and from the beginning his counsel as to the finances of the company was of great benefit. From the time the company became incorporated Colonel Perkins was its treasurer, until, upon the death of Dr. Goodrich, he became president. A personal sketch of Colonel



THE LATE FRANZ CLOUTH.

Colonel Perkins was a public spirited citizen and his memory will be perpetuated by many of his acts for the benefit of the city, including the gift of a beautiful park. He was an unostentatious contributor to very many charities.

FRANZ CLOUTH.

THE founder and senior head of the important German firm, Franz Clouth Rheinische Gummiwaaren-Fabrik m. b. H., at Cologne-Nippes, died unexpectedly on the morning of September 7. Thus is lost to the trade of his country one of the ablest, most resourceful and most successful members.

Franz Clouth was born on February 18, 1838, in Cologne, where he attended school and received his business training. After spending a few years abroad to complete his education, he returned to Cologne in 1860 to start in business for himself. Soon he turned his attention to the rubber goods line, which was then only in its infancy, hardly foreshadowing its later world-wide possibilities and present commercial importance.

As early as 1864, he began manufacturing on a small scale. The unusual economic wave which swept over Germany after the great political events of 1870-71 could not but favorably affect the development of his business, so that in 1875 a new and larger plant had to be erected in Nippes, becoming more important and extensive from year to year.

The development of applied electrotechnics in its ever widening range, whose great future possibilities Franz Clouth clearly foresaw, induced him to erect in 1891, near his former factory, a new building for turning out insulated wire and cables of all kinds. Owing to the extension of his cable works, it appeared desirable that its management, which up to the present time was merged within the joint control of both plants, be made entirely independent and, accordingly, in 1898, the whole cable department was transformed into an independent enterprise under the firm Land-Seekabelwerke Aktiengesellschaft. With Herr Clouth as chairman of the board. One of the chief reasons for this was, besides, the intention to include the manufacture of submarine cables within the range of the business, that the economic development of Germany and especially her colonial expansion policy warranted the assumption that in the near future she would be bound to enter into competition with England in the branch of transatlantic cable lines.

These circumstances made Franz Clouth realize the necessity of putting up a submarine cable plant on the coast, and the young company, at his suggestion, set to work at once to secure a suitable site for erecting a branch at Nordenham, on the lower Weser. The coöperation of the firm with another one and their respective banking groups, first originated the Deutsche Atlantisch Telegraphen-Gesellschaft, of Cologne, and the Norddeutschen Seekabelwerke Aktiengesellschaft, of Nordenham. Franz Clouth undoubtedly deserves the credit of being the father of the Nordenham works, and consequently of the German marine cable industry in general. It is due to the creative efforts and subsequent developments at Nordenham that it became possible for Germany to inaugurate an independent ocean cable service. One result was the establishment of the German-Dutch-East-European and South American Telegraph companies, in each of which Franz Clouth was a director.

Recently, Franz Clouth took a strong interest in aeronautics, as he had before in electrotechnics, and of late became quite active in the construction of air balloons and dirigibles, one of which gained just recognition for having distinguished itself on the Ila in Frankfort o/M., and in trips to and within Brussels.

In spite of the enormous amount of personal attention his factories demanded and his great loyalty to unconditional duty that called for the utmost exertions, both on his own part and that of his employes, Franz Clouth found time to repeatedly make long trips over Europe, and through Africa and India, during which time he made a special study of the conditions bearing on rubber-plantation culture. He also wrote a monograph on the rubber industry published at Weimar in 1873, 1879 and 1899. An enlarged English edition of this work entitled, "Rubber, Gutta-Percha and Balata," appeared in 1903 in London and New York.

In Franz Clouth, the large industrial circles of Cologne and the Rhein country have lost a well renowned person whose tireless activity will be greatly felt even after his death. The employes joined in a public testimonial in which they said: "We have lost an industrial chief and adviser whose high powers of mind and heart we shall honor perpetually, and cherish in our memories."

Franz Clouth in 1862 married Miss Theodore Wahlenberg, of Cologne, who died during the Franco-Prussian war. In 1872 he married Miss Josephine Baum, of the same city. For some years two sons of Mr. Clouth have been connected actively with his rubber interests, Max Clouth being the active director of the works at Cologne-Nippes.

[For a fuller personal sketch of Herr Clouth see THE INDIA RUBBER WORLD, April 1, 1902—page 207. For a description of the cable works at Nordenham, the issue for January 1, 1908.]

EDUARD FRANKENBERG

EDUARD FRANKENBERG, the founder and head of the firm, Gummiwerk Eduard Frankenberg G. m. b. H., Hamburg, Germany, died on August 30. He had worked long and successfully in the production of rubber coated fabrics, and with unremitting zeal for the perfection of technical manufacturing methods. The business of the firm will be continued by his capable and experienced associates.

BRITISH OBITUARY NOTES.

THE death occurred recently of Mr. George Frederick Sheath, the head of the firm of Sheath Brothers, manufacturers of specialties in india-rubber and gutta-percha, in London. The house was founded in 1845 by the late James Sheath, who died in 1878, when his brother, the subject of this notice, became the head of the firm. Mr. Sheath was in his eighty-seventh year, but was able to attend to business regularly until within a few months of his death. Mr. James T. T. Sheath, nephew of the deceased and son of the founder of the firm, entered the business in 1886 and became a partner in 1895, and will continue the business.

The death occurred on August 20 of Mr. Henry Phillips, the agent at Coventry for the North British Rubber Co., Limited, in his seventy-fourth year. He was highly respected in Coventry business circles, and had long been identified with the trade in clincher pneumatic tires.

RUBBER PRODUCTION OF THE AMAZON.

THE amount of rubber produced in the Amazon region for the last three crop years has been stated in detail in reports by the imperial German consul at Pará, from which these figures are compiled:

STATE OF PARA.				
		1907-08.	1908-09	1909-10.
Rubber	.....tons	9,428	10,457	9,031
Caucho	.....	857	1,070	1,130
Total	.....	10,285	11,527	11,061
STATE OF AMAZONAS.				
[Including the Federal territory of Acre.]				
Rubber	.....tons	16,771	16,587	18,685
Caucho	.....	4,969	5,270	5,474
Total	.....	21,740	21,857	24,159
REPUBLIC OF PERU.				
Rubber	.....tons	3,407	3,176	3,900
Caucho	.....	1,720	1,853	2,000
Total	.....	5,127	5,029	5,900
SUMMARY.				
Rubber	.....tons	29,606	30,220	32,516
Caucho	.....	7,546	8,193	8,604
Total	.....tons	37,152	38,413	41,120
Total	.....pounds	81,005,300	84,085,300	90,653,152

These figures compare only approximately with those obtained from some other recognized sources and printed from time to time in this journal, but they are of interest in showing whence comes the increased production of rubber in the Amazon valley. While the fact is not shown specifically, the major part of the increase comes from the Acre territory.

GEORGE A. TURNER, a life-long resident of Providence, Rhode Island, and a well-known citizen, died at his home there on June 17, after being seriously ill for but a short time. He was born October 17, 1834, educated in Providence, and inherited abundant means. He was one of the incorporators of the Davol Rubber Co. and a director thereafter. He visited the offices of the company on the second day before his death.

Some Rubber Interests in Europe.

NINETIETH BIRTHDAY OF A RUBBER PIONEER.

A HISTORIC figure in the European rubber industry is Herr Ludwig Elder von Reithoffer, who celebrated his ninetyeth birthday on August 19. It was this gentleman through whose agency was brought under one control the rubber firms of Menier, in Harburg, and J. N. Reithoffer, in Vienna, under the style Vereinigte Gummiwaren-Fabriken Harburg-Wien, vormals Menier—J. N. Reithoffer. This consolidation was accomplished June 1, 1872, after which the subject of this sketch maintained a connection with the new company for many years as a member of the advisory committee. The Harburg factory was established in 1846, and the Wimpassing factory (near Vienna) in 1854. The founder of the latter, however, Johann Nepomuk Reithoffer, was working in rubber in Austria many years before, and in 1825 started a rubber thread factory in Vienna. The Harburg-Wien company, therefore, is a direct successor to the business of Johann Nepomuk Reithoffer. [See THE INDIA RUBBER WORLD, Jan. 1, 1897—page 126.] Herr Ludwig Reithoffer has for many years stood as the senior pioneer in rubber in Austria, and been able to watch with much satisfaction the influence of his work spread far beyond the Austrian boundaries.

LEYLAND AND BIRMINGHAM AFFAIRS.

THE trading profit of the Leyland and Birmingham Rubber Co., Limited, for the year ended June 30, 1910, was £33,039. The dividends amounted to 7½ per cent., this being the third year in succession for which this rate has been paid. For the preceding year the trading profit amounted to £27,978.

At the recent annual meeting of the Leyland and Birmingham Rubber Company, it was mentioned that the directors were desirous that as many of the employes as could do so should invest their money and become shareholders in the company by which they were employed. They would then be in a position of not only earning from a wages point of view, but also from an investment point of view, as a direct result of their labors.

HALF A CENTURY IN RUBBER WORK.

BERNHARD WICKELMANN, employed in the machine shop of Dr. Heinrich Traun & Söhne, (Harburg,) celebrated the fiftieth anniversary of his connection there on July 19. In the morning his neighbors decorated his house, after which he was taken in a carriage to the rubber works, where his fellow workmen had covered a table with gifts for him. Mr. Heinrich Otto Traun, proprietor of the works, presented him with a donation in cash. Wickelmann will in future receive a pension from the company, being now the thirteenth of a group of surviving employes of the Traun works who have exceeded a service of 50 years. [See THE INDIA RUBBER WORLD, July 1, 1910—page 355.]

A NEW RUSSIAN RUBBER COMPANY.

THE Gummiwaren-Fabrik "Russia" Gebrüder Freysinger, at Riga, has issued a circular inviting coöperation for organizing a Russian stock company for the rubber goods trade, under the name of Aktiengesellschaft "Kautschuk." The capital stock of the new company has been fixed at 1,000,000 rubles (\$515,000) divided into shares of 100 rubles. The company intends to enter into an agreement with the firm "Russia" under the terms of which the latter would obligate itself to sell its products exclusively to the "Kautschuk" company, without having the right to sell to any other parties, and the new company is to be in a position to obtain the products of the "Russia" almost at the manufacturer's cost price. The organizers of the new company are S. S. Gens, merchant, chief business manager of the

"Russia" company; Kommerzienrat B. A. Magner, manager of the Odessa branch of the International Bank of St. Petersburg; and J. A. Brodsky, "hereditary honorary citizen," manager of the Odessa branch of the Northern Bank.

DUBLIN'S CAR TRAFFIC THREATENED.

THE introduction of taxicabs into Dublin is being actively encouraged, particularly by Mr. Harvey du Cros, J.P., chairman of the Dunlop Pneumatic Tyre Co., Limited, who in the past has had such large business connections in that city. He has made arrangements whereby Dublin car drivers can become proficient in the operation of the new cabs without expense to themselves, and a number of the carmen have arranged to take advantage of the new condition. On the other hand, a large element of the carmen oppose the taxicabs, and have formed an organization against the introduction into Dublin of taxicabs, to ruin their business "in order to support an English monopoly." The value of the cab property in Dublin is estimated at £100,000, and the cab owners claim to spend yearly in that city £250,000 for horses, supplies, repairs, and the like.

GREAT BRITAIN.

THE directors of the Gandy Belt Manufacturing Co., Limited, have declared an *interim* dividend of 6 per cent.

The British Murac Syndicate, Limited, declared a dividend of 25 per cent. on the preference and ordinary shares for the first half of their current business year.

India-rubber tiling made by the India Rubber, Gutta Percha, and Telegraph Works Co., Limited, has been laid down in 180 vessels, including 10 ships of the British navy and several foreign battleships.

The Dunlop Pneumatic Tyre Co. (South America), Limited, was registered in London on August 11 with £5,000 capital, to take over the business of the Dunlop Pneumatic Tyre Co., Limited, carried on in South America by B. J. Ebsworth as sole representative of that company.

The newest automobile ordered for King George is a "Silent Knight" Daimler car, of which it is mentioned that "probably the most notable feature will be the very large Palmer tires and Rudge-Whitworth detachable wheels."

Among the advantages to the members of the Royal Automobile Club of Great Britain, it is pointed out that all the associates, whether individual or members of associated clubs, and their private drivers shall have the benefit of free legal representation in any police court in England or Wales on the hearing of any summons arising out of the ownership or driving of private automobiles. The traveling expenses of the solicitors instructed will not be charged to associates.

RUSSIA.

THE Russian-American India Rubber Co., "Treugolnik," of St. Petersburg, has opened a new branch office at No. 125 Petrikanerstrasse, Lodz, Mr. Felix Zielinski having been appointed manager.

GERMANY.

UNDER the style of Gummiwerke Frankfurt Aktiengesellschaft, the old concern Franfurter Gummiwaren-Fabrik A. G., has been registered with a capital of 1,000,000 marks [= \$238,210]. The works belonged formerly to the present proprietor of Offenbacher Gummiwerke Carl Stoeckicht, G. m. b. H., at Offenbach.

SWEDEN.

KARER PER OLOF SAMUELSON has become a member of the Aktiebolaget Continental Caoutchouc Compagnie, at Stockholm, in the place of Axel Hermansson, a merchant. Manager Carl Friedrich Wilh. Ph. Junge will sign the company's name, with another member of the board of managers.

HARTFORD TIRE MEN IN CONFERENCE.

THE Hartford Rubber Works Co., Hartford, Connecticut, has been very successful as their guests the company's branch managers and salesmen from different parts of the United States. Since the war it has been the policy of the company to bring together annually at the factory their representatives from all over the country to enable them to become more closely acquainted with the manufacture of tires and the methods of the home office. The conference was in session daily from September 15 to September 19, the days being given up to different meetings, which began at 8 A. M., lunch being served in the officers' dining room at the factory.

The general policy of the company for the coming year were outlined to the men, selling campaigns planned, advertising methods discussed, and in fact all points of interest covering the manufacture and merchandising of Hartford tires were dwelt upon. Those in attendance were as follows, the figures against each name referring to the numbers on the pictured group:

EXECUTIVE BOARD AND HARTFORD STAFF.

J. H. Venable, president.
H. F. Jones, vice-president.
J. S. Bowers, secretary.
J. P. K. [unclear], treasurer.
D. W. [unclear], assistant treasurer.
Charles B. W. [unclear], factory superintendent.
E. K. [unclear], sales manager.
M. C. [unclear], maintenance department.
C. Clark [141], automobile tire department.
A. L. [unclear] [18] and W. H. [unclear] [45], solid motor tire department.
Guy Turner, repair department.
A. [unclear] [unclear].
G. S. Holmes [40].

BRANCH MANAGERS.

New York—L. S. Roe [17]. Phila.—J. H. W. R. Barnes [36].
Chicago—W. T. Powell [39]. Detroit—H. C. Severance [16].
Boston—O. S. Johnson [35]. East—Chas. Hammond [31].
Cleveland—P. H. Goodall [11]. Atlanta—A. W. Kirk [38].

SALESMEN.

Chicago—G. R. Noble [8], H. E. Smith [15], P. B. Simmons [26], A. W. Clark [37], G. H. Wright [42].
Buffalo—S. N. Keller [9], R. M. Barrett [27].
Cleveland—H. B. McIntosh [12], T. McQuay [33].
Philadelphia—J. Hoffman [14], E. J. Dunce [16], H. V. Koons [21], E. H. Johansen [24], Garfield East [29].
Connecticut—E. S. Edwards [18], James Morgan [33], C. Towne [13].
Boston—L. C. Havener [19], L. Frohock [26], G. D. Niles [32].
New York—W. R. Brown [22], E. H. Laby [23], A. D. Cullen [25], H. P. Snyder [44].
Detroit—J. J. Tompkins [31].

On Saturday automobiles took the party to the Shoreham, at Morris Cove, Connecticut, where dinner was served and the afternoon devoted to athletic sports. The menu card was an artistic piece of work—in keeping with the viands served—embellished with a number of comic sketches, each relating to some one of the guests at the dinner, and having as a general text the motto "By their faults ye shall know them."

It is stated that whereas the Austrian rubber trade has been brisk during the past year as far as home markets are concerned, the export trade has been extremely difficult, owing to foreign competition. Although a good trade has been done by home manufacturers of tires, the import of goods in this branch amounted within a year to 5,346,000 kroner [= \$1,085,238]. England, Russia, Germany and the United States continue to export large quantities of rubber shoes to Austria and Hungary. Austrian firms have now taken up the manufacture of balloon fabrics.



ANNUAL CONFERENCE OF THE HARTFORD RUBBER WORKS CO.

The Rubber Tire Trade.

POLACK TIRES COMING TO AMERICA.

THE manufacture of the Polack truck tire, already important in Germany, the country of its origin, is to be introduced into the United States. For this purpose the Polack Tire Co. has been incorporated under the laws of Maine, the directorate being composed of members of B. Polack Aktiengesellschaft, of Waltershausen, and the Pennsylvania Rubber Co., at the factory of which, at Jeannette, Pennsylvania, the tire will be manufactured under the same processes and methods as in Germany. It is pointed out that this tire can thus be supplied to the American trade at a less cost than hitherto under the high import duty; also that on account of the demand at home the German company find it impossible to supply the export trade. The method of mounting this tire is indicated by the accompanying illustration of one of the types. The officers of the company are Herbert DuPuy, president; A. Hauschild, vice-president and general manager; and H. W. DuPuy, treasurer. The board of directors consists of these officers and F. Poppe, Max Polack, and C. M. DuPuy. Seneca D. Lewis is secretary. Messrs. Polack, Hauschild and Poppe are connected with the European

manufacturers, but today the manufacturers of rubber tires also take part, in view of the rapid introduction of rubber tired fire apparatus. Such tires are in wide use on horse drawn apparatus, but the more advanced practice calls for automobile fire engines, of which a number of specimens were shown at Syracuse. Most of the important makers of rubber tires were represented, as well as the well known salesmen of fire hose.

OLNEYVILLE PLANT OF THE REVERE COMPANY.

THE Revere Rubber Co. have been making important additions to their premises at Olneyville (near Providence), Rhode Island. As reported already, the Revere company plan the operation in future of the Banigan Rubber plant [see THE INDIA RUBBER WORLD July 1, 1910—page 365]. They have now purchased the neighboring property known as the Valley Worsted Mill, from which the woolen machinery will be removed, to be replaced with rubber plant. With these changes and additions the Revere company will have at Olneyville one of the largest rubber tire plants in existence, it being understood it is their intention to devote this plant to automobile tires alone.

THE TIRE FABRIC TRADE.

CATLIN & Co. (No. 345 Broadway, New York), have accepted the exclusive selling agency of the Wilkinsonville Mills (Wilkinsonville, Massachusetts), manufacturers of tire fabrics. Catlin & Co. have dealt extensively in goods of this class for several years, and are pleased to offer to the tire trade fabrics of the most exact construction. The Wilkinsonville mill is equipped to make tire fabrics of regular and special construction, in all widths and weights. The equipment includes special patented and exclusive automatic loom devices, which will insure positive exactness of width and the elimination of light spots or other unevenness of weight.

CONTINENTAL CAOUTCHOUC CO. IN PARIS.

Two paragraphs appearing recently in the public prints in Paris, France, read in English as follows:

Société du Pneu Continental—146, Avenue Malakoff. In view of the satisfactory progress of its business, this company has resolved to enlarge its manufacturing plant at Clichy, near Paris, and to increase its capital stock from 500,000 francs to 2,000,000 francs.

A company to be known as the Compagnie Continental du Caoutchouc is now being organized with a capital stock of 1,500,000 francs, for the purpose of working the Rouxville patents.

THE INDIA RUBBER WORLD is advised by the Continental-Caoutchouc- und Gutta-Percha-Compagnie (Hanover): "Both companies mentioned are the same, and connected in interest with our own company."

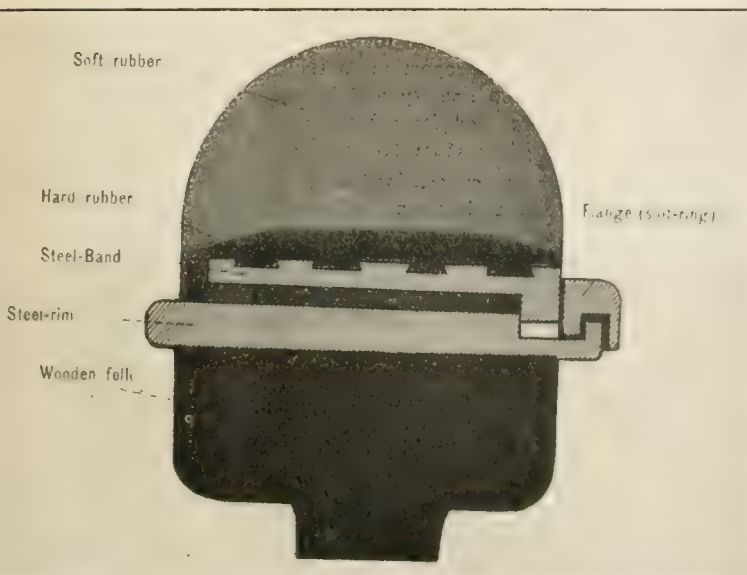
STILL THE TIRE MAKERS COME.

THE Banner Rubber Co. (St. Louis) have taken on the manufacture of automobile tires. For the benefit of the automobile trade they have opened a tire salesroom at No. 3840 Olive street. They have adopted the name "Autocrat" as their leading brand.

The Mishawaka Woolen Manufacturing Co. (Mishawaka, Indiana), have been experimenting with automobile tires and have turned out a number of samples. They are reported to have been buying additional real estate, and to have put in considerable tire machinery.

BROADWELL MUST BE A GOOD FELLOW.

FOLLOWING the retirement of Mr. Edward H. Broadwell from the position of vice-president and New York manager of the Fisk Rubber Co. (See THE INDIA RUBBER WORLD September 1, 1910, page 443), a complimentary banquet was given to him at Churchill's, in New York, on the evening of September 1, attended by nearly 100 of his fellows in the New York trade. Very many telegrams from a distance brought good wishes, and a diamond ring was presented to Mr. Broadwell through President



SECTIONAL VIEW OF POLACK TRUCK TIRE.

business; the other directors with the Pennsylvania Rubber Co. The arrangements were made in behalf of the German house by Messrs Hauschild and Poppe, the former of whom will be in permanent charge of the Polack Tyre Co. in America. The principal office will be at 1741 Broadway, New York, which is the Pennsylvania Rubber Co's. branch office.

RUBBER TIRES ON EXHIBITION.

In connection with the thirty-eight annual convention of the Carriage Builders' National Association, held this year in Cincinnati, during the last week in September, occurred the usual exhibition of carriage materials. There was announced in advance an extensive list of exhibitors, including a number of leading rubber firms, the latter exhibiting in addition to tires, carriage cloth, carriage mats, and other accessories involving the use of rubber.

Mention may be made here also of the exhibition in connection with the thirty-eighth annual meeting of the International Association of Fire Engineers, held recently at Syracuse, N. Y. These exhibitions have long appealed to the interest of fire hose

Wyckoff, of the Motor Racing Association. On leaving the Fisk branch Mr. Broadwell received a handsome present from the sales staff.

On arriving at Detroit, Mich., to take the post of second vice-president and sales manager of the Hudson Motor Car Co., Mr. Broadwell was welcomed with a dinner presided over by the president of the company, Mr. R. D. Chapin, and attended by the heads of the various departments.

Mr. J. B. Cothran, who is well known in the tire trade, has been appointed manager of the New York branch of the Fisk Rubber Co.

NOT SO MANY BICYCLE JOBBERS NOW.

THE new list of the National Association of Bicycle Jobbers contains the names and addresses of 131 concerns dealing with bicycle supplies which are considered to be entitled to the designation "jobber." A number of names formerly on the list have been omitted. The firms mentioned are scattered among 63 cities, in 29 states. Five of the houses are rubber goods jobbing firms. Seven of the total number are located in New York City, seven in Philadelphia, six each in Boston and Syracuse, and five each in Chicago and Los Angeles.

CANADIAN IMPORTS OF CYCLES AND MOTORS.

THE following statistics, for the three months April-June, for three years, are supplied by the Canadian department of trade and commerce:

BICYCLES.			
	1908.	1909.	1910.
From Great Britain	\$ 3,885	\$10,325	\$38,927
From United States	11,464	12,921	19,480
From Other Countries			43
Total	\$15,349	\$23,246	\$58,450

AUTOMOBILES.			
	1908.	1909.	1910.
From Great Britain	\$ 22,558	\$ 35,372	\$ 65,406
From United States	122,472	412,317	1,273,057
From France	6,875	35,495	35,473
From Other Countries		1,029	5,451
Total	\$151,905	\$484,213	\$1,379,387

TIRE GUARANTEES IN GERMANY.

[FROM THE "GUMMI-ZEITUNG," BERLIN, AUGUST 19.]

THE increasing popularity of rubber tires for horse drawn vehicles, as well as the use of heavy passenger and freight automobiles, naturally opened up a more extensive outlet for solid tires and made them an article of greater importance. It consequently became necessary to meet the many different and frequently utterly unfounded demands of the buyers in regard to the requirements which such tires should answer, by uniting on the terms of the guarantee to be given. In view of this necessity, the German manufacturers have agreed to do all their future business in solid tires exclusively on the basis of the terms jointly decided on. In future, vulcanized-on solid tires will be sold under a guarantee for only one year from the date of delivery at the works and up to a covered driving distance of 15,000 kilometers [=9,321 miles], providing the following provisions are complied with:

1. The tires must be used only for driving on good, public, solidly constructed roads. We are not liable for defects in tires, due to driving on newly graveled or ballasted and unrolled roads, and our obligations contracted under this guarantee shall likewise cease whenever chains or ropes are used on the tires, and whenever rubber tires are used on the driving wheels on one side only—i. e., when the opposite wheel is run without rubber tire, and with an iron tire, for instance.

2. The tires must not be made to carry loads heavier

than those for which they are intended in view of their cross section.

3. The number of kilometers covered each day must be accurately ascertained and entered in a book.

4. We are to be notified at once, whenever a tire becomes defective before the distance of 15,000 kilometers has been covered. If the defect is so serious that it can be used no longer on the vehicle, either the tire or the complete wheel must be forwarded to us for inspection.

If a tire should become unfit for use in consequence of faulty manufacturing or defective material, a new tire will be supplied on the basis of the price list in force at the time and of the part of the guaranteed distance which the old tire has failed to cover, or else a credit memo will be issued for the number of kilometers which such tire failed to cover. The defective tires are to become the property of the manufacturers, who shall have the right to decide on indemnifying the purchases in either of the aforesaid ways. Allowances for any number of kilometers less than the guaranteed distance which a tire fails to cover, shall be figured proportionally to the value of either the rubber tire or of the steel band.

In the case of tires for which an allowance must be made in consequence of their failure to cover the guaranteed distance, no settlement shall consequently be made on any basis which may include the inserted steel band, as long as the same still remains fit for use. If vehicles are used for hauling trailers, the guarantee shall be reduced in proportion to the cross sections of the tires used up, etc. No liability will henceforth be assumed in cases where tires are used for vehicles for which they are not adapted in view of their cross section.

These new provisions concerning the manufacturers' guarantee are well adapted for at least improving conditions in the solid tire trade. There can be no doubt that the present abuses could not in any event be allowed to continue, inasmuch as the terms of the guarantee for solid tires have not been stipulated by the manufacturers, but by the purchasers.

The new departure affords, moreover, a further important advantage. It will compel buyers and consumers to refrain from buying and using the tires of small cross section which, while used on account of their cheapness, were absolutely incapable of doing the work and of answering the requirements of the consumer. When seeing carriages and freight automobiles with diminutive tires, it must have been plain to the mind of even unexperienced persons that they could not possibly render good services in the end. All this will be changed now, and the users of the vehicles themselves will get their full share of the benefit, inasmuch as the trouble and expense incident to repairs will be considerably reduced, if not wholly avoided.

In view of the further progress made by the vehicle tire manufacturers in settling the guarantee question as aforesaid, it appears desirable for the automobile pneumatic tire manufacturers likewise to come to an agreement in regard to the guarantee for pneumatic tires for automobiles. Up to the present time, this line of tire manufacturing has failed to meet adequately the requirements of the trade, such as they actually are.

The bicycle pneumatic tire manufacturers did not hesitate to bow to the necessity of an uniform guarantee, and the manufacturers of solid tires have now followed in their footsteps, and it has become a more than urgent necessity to likewise come to an agreement in regard to the guarantee for automobile pneumatic tires and the maximum loads they should be allowed to carry, and to thus place these matters on a suitable standard basis. There appear to be good and sufficient reasons to expect that this matter, which is exceedingly important for all manufacturers of automobile pneumatic tires, will in the more or less near future be settled in a more satisfactory manner.

The Last Goodyear Rubber Inventor.

IT will be news to many people in the trade that up to within the last month there has been living one of the earliest workers in india-rubber—a Goodyear who was in close touch with the discoverer of vulcanization. This was General Ellsworth D. S. Goodyear, who died on September 3, at North Haven, Connecticut, in which town he was born, April 28, 1827.

General Goodyear was the eldest of seven sons of Bela Goodyear, and a descendant in the sixth generation from Stephen Goodyear, first deputy governor of New Hampshire. His great grandfather was a Revolutionary soldier and he and four brothers fought in the Civil War of 1861, one brother, Walstein Goodyear, being killed in battle. Bela Goodyear, here mentioned, was a brother of Amasa, whose son Charles became noted in connection with rubber.

At the age of 16 years the subject of this sketch became employed in the office of a New Haven newspaper. In 1846 he visited New York, with a letter to his cousin, Charles Goodyear, through whose influence he hoped to enter some newspaper office. Instead, however, he entered the employ of the distinguished rubber man, connected with whom were the latter's brothers, Nelson and Henry B. Goodyear. His work in rubber, which covered 14 years, it is not now possible to mention in detail.

While residing in Newark, New Jersey, in connection with a rubber factory, Mr. Goodyear had acquired some knowledge of military tactics, and at the outbreak of the Civil War he recruited Company C, of the Tenth Connecticut Volunteers, which he served as captain for three years. Later he was successively promoted to be major and lieutenant colonel, and he was in command of the regiment at the beginning of 1865. He was severely wounded before Petersburg, Virginia, and Congress made him a brevet brigadier general "for especial gallantry in the assault on Fort Gregg." Following the war General Goodyear was for many years connected with the New Haven custom house, after which he remained in the quiet of home, cared for by a loving family.

General Goodyear is mentioned by his family as having been employed in rubber work in factories in Harlem and elsewhere in New York City, as well as Newark and Stapleton, Staten Island. He is referred to as having been "the first superintendent of the Goodyear Hard Rubber Factory on Staten Island. His last employment in the rubber business was with the Beacon Falls (Connecticut) Rubber Co. He resigned his position with them about 1860, owing to ill health." [There was a Beacon Dam Co., at Beacon Falls, succeeded in 1859 by the old American Hard Rubber Co.] He is regarded as having contributed in an important way to several inventions in rubber, including a process for making hollow rubber balls which became standard. By the way, the annual report of the United States patent office for 1854 contains this information:

10,680. Improvement in Processes for Treating India-rubber. E. D. S. Goodyear, Stapleton, New York, assignor to E. A. New York Rubber Co. March 28, 1854.

"The improvement refers to the manufacture of hollow articles from india-rubber, and consists in filling such ware, as balls, etc.,

to a certain extent, with water, which being, during the process of vulcanization, converted into steam, exercises the necessary inside pressure to impart any desired pattern to the exterior face of the article.

"*Claim.*—The introduction of water or any other liquid into the interior of articles which require expansive force for their perfect formation against the interior surface of molds, said liquid to be converted into steam, substantially as, and for the purposes, specified. [No illustration.]"

It is claimed for General Goodrich that he had a part in the invention of hard rubber, with which he experimented while at Newark. The following memorandum on the subject he left among his papers:

Manufacturers of rubber had long been trying to find a substitute for the soft rubber which could be hardened sufficiently to be used for the same purposes.

substitute for the soft rubber, by experimenting with chemicals of one sort and another. I was one of the first in Liebig's "Chemistry" the subject of the properties of sulphur, and sulphur melted in a small time, and of heat, and made a small amount.

It occurred to me that this might be the solution of the problem, and upon making the suggestion to my neighbor, Henry B. Goodyear, he arranged with the engineer to have the sheets made high enough during the treatment to each year. I prepared two packages of gum, adding to the first two ounces of sulphur, to the second four ounces, and to the others in succession six, eight, ten, and twelve ounces. These mixtures were rolled into sheets about 1/8 inch thick, placed between some bright sheets of tin greased with lard, wrapped in rubber cloth, the whole put into a small steam boiler used for experimental purposes, and subjected to pressure, at which point it was kept for eight hours. When the package was eagerly opened the sheets were found to be of varying degrees of hardness; those of the lesser amounts of sulphur were flexible, while the sheet composed of one pound of gum and eight ounces of sulphur was the best of the lot.

Henry B. Goodyear took it to a pearl button factory near by and had several disks cut out and polished. This was the foundation of the patent, and the great button business as well as the thousand and one other uses to which hard rubber is now applied the world over. Because of the brittleness of the material it failed to be used as a substitute for whalebone.

The date of the experiments here referred to is not stated, but it will be remembered that the original hard rubber patent was granted in 1851 to Nelson Goodyear, with a reissue in 1858 to his brother Henry B., after the death of Nelson.

General Goodyear left other memoranda relative to his work in rubber which THE INDIA RUBBER WORLD hopes to use in time.

A BRITISHER ON AMERICAN MOTORS.

THE important London journal *Autocar* has interviewed Mr. F. R. Sims, of England, on his return from the United States, where he traveled extensively with a view to making himself acquainted with the present condition of the American automobile industry. Mr. Sims was asked:

"Then, the stated outputs which have struck our business people with astonishment are not so astonishing after all?"

"No, certainly not, and the figures have not been overstated. I traveled about 6,000 miles during my stay, and visited nearly every important motor factory in the States."

Questioned in regard to the progress of the manufacture of motor trucks for commercial purposes, Mr. Sims stated that this interest was going ahead very strongly. He thought that 25,000 motor trucks carrying up to five tons would be turned out this year and absorbed by the trade.



THE LATE E. D. S. GOODYEAR.

THE RUBBER TRADE AT AKRON.

A. J. H. CORRESPONDENT.

AKRON, OHIO, September 29.—The rubber manufacturers see in the very considerable business that recently led to the reduction of the working forces of several local factories and the shortening of hours of employes in other shops nothing more serious than the usual dullness in the automobile tire market, following a busy spring and summer. The situation is felt more, perhaps, because the season just past has been an unusually busy one.

"We won't begin to stock up until November 1," said Mr. A. H. Marks, vice-president and superintendent of The Diamond Rubber Co. "It isn't good policy to carry tires in stock for a long period. The trade during the summer was more active than customary. That's what is making some folks think the present lull is something more serious. We will keep only enough men at work to take care of the current trade."

Several hundred employes were laid off temporarily at the Diamond. Every shop in the city is doing the same.

Akron manufacturers declare an undercurrent of unrestful comment upon the automobile and the tire situation that has been recently making itself felt locally isn't based upon fact. They are emphatic in their statements that the automobile and the rubber manufacturing industries are built upon solid foundations.

"You can't stop the tire business," said Mr. H. S. Firestone, president of the Firestone Tire and Rubber Co. "It has come to stay. It may vary somewhat according as there are good times or bad times, but in the main there will be a steady, healthy development. In slack times, when business conditions throughout the country are disturbed, fewer tires will be sold than during good times. The automobile owner, for instance, will be more careful of his tires and of his machine than at other times. He will make fewer pleasure trips and the tire industry will feel the difference. Our company is confidently looking forward to a good year of business."

The high price of crude rubber is attributed in some sources as one of the causes for the slowing down in the manufacturing business.

"Akron companies aren't going to stock up on tires and other goods with material costing so much," said Mr. T. C. Marshall, cashier of the Buckeye Rubber Co.

* * *

THE development of the Buckeye Rubber Co., one of Akron's newer rubber manufacturing concerns, has been rapid since the fire, which so seriously damaged their plant a little more than a year ago. The plant now consists of five factory buildings. A curing department and a machine room have been built this year, and another for the manufacture of pneumatic tires was finished last spring. The curing room is one of the finest in the country. It is equipped entirely with modern apparatus. There are six presses. The plant is so located that the city water pressure is inadequate for fire protection, and \$10,000 has been expended in the installation of a sprinkler system throughout the premises. Water is drawn from the Cuyahoga river. Until two years ago the company's chief product was the Kelly-Springfield solid carriage tire. The manufacture of pneumatic tires was then taken up, and with such splendid results that facilities for this branch of the business were immediately increased. Two hundred men are employed at the plant now, and the daily output is 200 pneumatics, of the regulation clincher type. Inner tubes are also made.

* * *

THE capital stock of the Rubber Products Co., of Barberton, near Akron, was increased from \$150,000 to \$300,000 at a recent meeting of shareholders. Part of the increase will represent a stock dividend out of the surplus earnings, and part of the new stock will be sold *pro rata* to the present owners of the company, of whom there are but few. The money is to be used for improvements, Mr. W. A. Johnston, president and treasurer, said,

The Rubber Products Co. make druggists' sundries and mechanical goods.

* * *

MECHANICAL equipment continues to be contributed by manufacturers of machinery and by the leading rubber goods firms to Buchtel College, for the benefit of the students who have taken up the new course in rubber chemistry. Some of the rubber manufacturing companies have offered to coöperate with the faculty in every way possible to render the new course of benefit to the students. Dr. Charles M. Knight, professor of chemistry, who has charge of the rubber class, is assisted by Hazzleton Simmons, a Buchtel graduate in chemistry, who has taken a doctor's degree at the University of Pennsylvania.

* * *

THE American Tire and Rubber Co., recently incorporated, purpose the manufacture of automobile tires, inner tubes, and solid tires; also the reclaiming of rubber by a new process, for which much is claimed. Frank L. Kryder, one of the local incorporators, was for several years assistant treasurer of the Peoria Rubber and Manufacturing Co., the factory of which was closed after the company passed into the hands of the Rubber Goods Manufacturing Co. The new company have not decided whether to locate in Akron, though several sites in this city are under consideration.

* * *

A MEETING of the shareholders of the Royal Rubber Co. has been called for October 22, to take action upon a proposal to increase the capital stock from \$50,000 to \$200,000. Extension additions are being made to the company's plant. O. C. Alling has resigned as president and William M. Bleeker, of Mansfield, Ohio, was elected to succeed him.

* * *

E. A. KRANICH, superintendent of the tire department of L. & M. Rubber Co., (Carrollton, Ohio), has been in Akron recently buying tire making equipment. This company succeeded the Mitzel Rubber Co., and Mr. Kranich declares it to be in a thriving condition. Harvey Miller, an Akron man, is superintendent of the druggists' sundries department.

* * *

MR. WILL CHRISTY, vice president of the Firestone Tire and Rubber Co., has authorized the publication of a notice of withdrawal from participation in forming the proposed Portage Rubber Co., of which mention was made in THE INDIA RUBBER WORLD, September 1, 1910 (page 448). It is stated that more than half of the \$1,000,000 capital desired has been subscribed.

* * *

THE Diamond Rubber Co. have opened a branch in Paris, under the management of Keith L. Goode, an American who has resided for 15 years in France. He is a brother of the branch manager in Paris of the Packard Motor Car Co.

* * *

J. W. KELLEY, who started as a clerk in The B. F. Goodrich Co. offices, at a very modest salary, when he came to Akron not so many years ago from the east, has been entertaining Akron people recently at his splendid new home at West Farmington, Massachusetts. As a clerk, all his spare earnings were invested in rubber stock. He ventured to borrow money, and it, too, went for stock. Four years ago he retired from active business and traveled extensively abroad with his family for two years. He is one of the many men whose fortunes have been made in Akron's rubber factories.

* * *

DURING the latter part of September the yearly conference of the officers, branch managers, and salesmen of the Firestone Tire and Rubber Co. took place in this city. The branch managers in attendance were D. C. Swander, New York; T. J. Glenn, Boston; W. R. Walton, Philadelphia; F. H. Martin, Chicago; C. E. Jackson, Pittsburg; W. A. Harshaw, Cleveland; J. V. Mowe, Detroit; W. F. West, St. Louis; E. L. Campion, Seattle; and C. C. Eichel-

berger, San Francisco. General agents from other important cities were in attendance. The conference concluded on the evening of September 23 with a dinner at the Portage Country Club, presided over by Mr. Harvey S. Firestone, president of the company, and at which 90 covers were laid, representatives of several other Akron companies being among the guests. During the evening a lecture on the Amazon rubber region was delivered by the Editor of THE INDIA RUBBER WORLD.

THE shareholders of the Swinchart Tire and Rubber Co. met on September 22. The directors chosen were Frank B. Theiss, William Byrider, R. A. May, Joseph Dangel, J. A. Swinehart, W. W. Wuchter, and August Blessman, the latter succeeding Frank R. Talbot. The officers were reelected as follows:

President and general manager—W. W. WUCHTER.
Vice president—JAMES A. SWINEHART.
Secretary—C. O. BAUGHMAN.
Treasurer—R. A. MAY.

The reports read showed the concern to be in excellent financial condition. The sales during the year were larger than during the year preceding. It was mentioned that the company had obtained the largest truck tire contract ever taken to equip commercial vehicles.

It is reported that United States Senator Charles Dick, who resides in Akron, and is a director in one of the larger local rubber companies, will introduce at the next session of Congress a bill to establish a custom house in this city. Such an establishment would result in lower fees for shippers. There are considerable exports from Akron of rubber goods and machinery.

A NEW aeroplane tire offered on the market by The Diamond Rubber Co. is of the single tube type, with a chrome leather tread, intended to resist the action of the spoon brake, like the old fashioned bicycle brake, that aviators use.

MR. WEB BROWN, formerly a newspaper cartoonist in Akron and later connected with the Youngstown *Telegram*, has become advertising manager of The Republic Rubber Co., of Youngstown.

THE RUBBER TRADE IN SAN FRANCISCO.

BY A RESIDENT CORRESPONDENT.

ANOTHER month has passed, showing a gradual and general improvement in all lines of industries in San Francisco, and, speaking generally of the state at large, conditions now are very prosperous. As for the rubber business in particular, it is difficult to detect any material change over last month, business with the average establishments being fairly good, but not at all rushing. Like everybody else, these merchants are hopefully anticipating that this fall and winter will develop into quite an active trade. The times are ripe for better business, and there is every reason to believe that the rubber mechanical goods' business, as well as tire and druggists' sundries, will improve materially.

A FORTNIGHT ago the state legislature met in special session and passed a constitutional amendment to be voted on by the people at the November election, authorizing the raising of \$5,000,000 by state taxation, and empowering the city and county of San Francisco to raise a separate \$5,000,000 by the sale of bonds, the object being to insure funds sufficient to hold a World's Fair in San Francisco in 1915, in honor of the Panama canal, and thereby induce Congress and the federal government to give the exposition its stamp of approval. San Francisco has already raised \$7,500,000 by subscription, so that \$16,500,000 will be available—a sum greater than has ever before been raised for such a purpose. The fair will mean the spending of some \$50,000,000 additional in San Francisco during the next five years, and it is needless to say that this is not only going to make active times,

but it is going to be a great thing for San Francisco by way of helping to place the city back on its feet after the \$300,000,000 loss sustained by the fire of 1906.

* * *

MR. R. H. PEASE, president of the Goodyear Rubber Co., states that business is moving along in fine fashion, and is showing up much better than last year. The recent rains throughout the state were premature, but fortunately were not lasting. Rubber boots and shoes should be in the hands of the customers before the rains set in. "We are glad to see the price of rubber getting down somewhat," he said, "as it has been a great task for all of the manufacturers to know what to do about making prices when rubber for a while was going up. We are living in great hopes that rubber will stand at \$1.90 or less a pound until the prices of goods get more or less settled. We anticipate that from October on we will have one of the best years we have ever had on the coast, as all we need is rain in the late fall, which is worth much more than rain from January to May. Rubber business on the Pacific coast is a great speculation, because we have to anticipate what is ahead for weather. If we figure the rains at the right time we sell all of our output, but if not it is very serious, because we have to carry stocks over for another year." Mr. Pease has just returned from a very pleasant trip to Los Angeles in an automobile.

THE eighth annual convention of fire chiefs of the Pacific coast was held at Stockton on September 6-7. It was one of the most largely attended conventions ever held, and many good papers were read. Motor driven apparatus was generally agreed upon as being the proper thing. Some of the rubber fraternity who were there were W. A. Daggett, Pacific coast manager of the Eureka Fire Hose Manufacturing Co., and Mr. Barton, with the same company; J. H. Phillips, manager of the Seattle branch of the Gorham Rubber Co., also, C. A. Taber with the Gorham company; and Fred A. Wood and A. J. Coffee, representing the Gamewell fire alarm system. At the fire chiefs' banquet Mr. Daggett gave a toast to "My Old Home City" and Mr. Phillips gave a toast "To the Ladies." The Eureka company had a big exhibit there, and some of the other firms likewise had displays of their lines.

* * *

CAPTAIN W. H. GRAY, who has been with the Diamond Rubber Co. for two years covering the northwestern territory, has been placed in charge of a branch store which this firm has just opened up in Portland. This move was considered wise owing to the great success which their Seattle branch has met with. Since putting in that branch their business there has trebled. F. O. Nelson, manager of the Los Angeles branch, writes that he is meeting with excellent results in specializing on motorcycle tires, as that section of the country is a great motorcycle center. After the return of General Manager C. E. Mathewson from his hunting trip in northern California he took a business trip to the new branch at Portland, and is back again in San Francisco. Lee Ijams and J. W. Whitehead returned to their duties after an interesting 1,000 mile hunting trip by automobile.

* * *

MR. W. D. SQUIRES, of Squires & Byrne Co., rubber and druggists' sundries, No. 565 Mission street, is just back from a five weeks' eastern trip. He has added to the territory of the Seamless Rubber Co. (New Haven, Connecticut,) now having the entire Pacific coast. He also secured the northern territory in addition to the local territory for S. H. Wetmore lines, and has secured for California Daniel's P. P. P. Packing and the Quaker City Rubber Co.'s full line of mechanical rubber goods. He states that business is moving along in fine style. It was not long ago when they started in with three men, and now they have nine.

* * *

MR. THOMAS J. McELROY, JR., manager of the Gandy Belting Co. (Baltimore), recently visited San Francisco and the Pacific

coast, and in making a comparison of business conditions said that trade activity is as good on the coast, as far as he can judge, as the East in the Eastern states. He reports a growing trade on his line throughout the Pacific coast.

* * *

MR. J. E. FRENCH, manager of the local branch of the Pennsylvania Rubber Co., is now making his northern trip. F. H. Hearsch, traveling man, has just returned from a trip for the firm and states that he finds conditions looking very well through all the important business sections along the coast.

The Crandall Rubber & Supply Co., on California street, and the Phoenix Rubber Co., on First street, have discontinued negotiations toward effecting a consolidation.

The Phoenix Rubber Co. report a very favorable business, especially at their branch store in Los Angeles.

Henry Norton, manager of the American Rubber Manufacturing Co., is out of the hospital, well and back to work again.

The Orca Manufacturing Co., which bought out the Young Sanitary Co., have taken offices in the Hooker & Lent building. Manager U. R. Grant is in charge and he states that they will soon lease considerable more space for use as sample rooms.

Mr. Frank N. Childen, the owner of a large rubber plantation at Rhodesia, South Africa, who was killed last May by a wounded wild elephant, while on a hunting trip, left real estate in San Francisco valued at several thousand dollars, which has been distributed to his daughter, Mrs. E. J. Randall, this city.

The Pacific Coast Rubber Manufacturers' Association gave a banquet at the Palace Hotel on Thursday, September 22. After the banquet the members held the annual election of officers.

THE RUBBER TRADE IN CINCINNATI.

BY A RESIDENT CORRESPONDENT.

THE past month has marked the opening in this city of two new branch houses of two leading rubber factories, and with the opening of these two branches Cincinnati is becoming recognized as the "Gateway to the South" by the rubber industry.

The B. F. Goodrich Co. opened its doors of its new Cincinnati branch on September 15. This company, following out its progressive plan, has long looked upon the Queen City as the logical point as a distribution point for the South. About three months ago the company entered into a long lease for a site and immediately had plans prepared for an office, salesroom and small factory building. The building of the structure was hurried and the past month it has been completed sufficiently for occupancy. The building is a two story structure and basement, located at No. 1122 Race street. The first floor is to be used as an office and salesroom, while the second floor is to be a complete factory in which is equipped the largest vulcanizing plant in Cincinnati. The basement is used as a stock room. Mr. E. S. Blake, who has represented the company on the road in the Michigan territory, has been appointed manager of the new branch.

Following close on the announcement of the Goodrich company that it would put up its own building, The Diamond Rubber Co. sought a good location, and secured a lease on a site at No. 809 Race street. The company has had erected a two story building of unusual architectural beauty, and on September 16 took possession. The Diamond has for some time maintained two offices in this city—one where solid rubber tires and rubber sundries were handled, while at the other pneumatic tires were handled. The two offices have been combined, with Mr. E. B. Tozier manager in charge. The building is finished in an elaborate manner, and all furnishings are in harmony with the beautiful new structure. The Diamond has employed 12 salesmen who operate from this point. This company will not operate any mechanical end of the business in its new premises, but will send all of its work to the factory at Akron.

Besides these two companies, the Goodyear Tire and Rubber

Co. and the Firestone Tire and Rubber Co. maintain local branches in Cincinnati.

THE RUBBER TRADE IN CHICAGO.

BY A RESIDENT CORRESPONDENT.

THE rubber trade in Chicago is showing signs of revival. Business fell off during the early part of September, but the last week has seen a flood of small orders booked by the local houses. Large orders are infrequent, but the large number of smaller sales will make a good average for the month. The local distributors take these small orders to indicate a healthy condition of trade, and look for a material increase during October.

The distributors of rubber druggists' sundries state that the condition of that branch of the trade has been in consonance with the general reports of trade by the drug houses of the city, which have universally defined it as dull. With the approach of the holiday season, and the early change from summer temperature to the colder autumnal season, a general revival of trade is indicated for the retail druggists, with consequent stimulation of the rubber sundries trade; sales of rubber sundries, it is expected, will therefore be correspondingly large.

With their season just opening the rubber shoe men are especially enthusiastic. With few exceptions mill and factory orders have been delayed. Advances, however, have been received of early shipments and with augmented stocks the anticipated brisk trade of the fall months will be fully taken care of.

* * *

Mr. W. H. SIMMONS, secretary and manager of the Chicago office of W. D. Allen Manufacturing Co., has been absent for a number of weeks on a trade tour of the East.

Mr. M. F. Paterson, manager of the local office of the Beacon Falls Rubber Co., is visiting the factory.

Mr. A. W. Smith, Western manager of the Goodyear's India Rubber Glove Manufacturing Co., is expected home from his eastern trip next week. He has been on a combination business and pleasure trip of four weeks, two of which were spent in the Berkshire hills.

Mr. W. A. Heppler, of W. A. Heppler & Co., spent several days recently in St. Paul on business for his company.

"ODD SIZED" MOTOR TIRES.

IN a timely editorial *The Horeless Age* points out the unnecessary number of "odd sized" tires produced. The original idea was to sell such tires to owners of cars whose tires were not large enough in cross section to give satisfactory service. Some of these met with such enthusiastic reception that other odd sizes have been added, until now the variety is almost endless. The writer adds:

"If these later sizes are needed it would seem that the need is a reflection upon tire manufacturers, for there has been ample knowledge during the past few years of what loads and speeds tires are serviceable under. So if any manufacturer has allowed his tires to be overloaded he has been guilty of a very shortsighted policy. And such a policy would be the less understandable, since there has been ample business to select from."

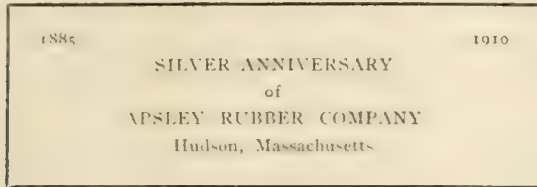
One criticism of the new practice is that the more of these odd sizes are brought out, the larger will be the investment necessary for tire branches and repair depots, and an ultimate decrease in tire profits."

ANNOUNCEMENT is made by Messrs. Tyson Brothers & Richardson, Inc. (Stamford, Connecticut), that from October 1 the firm will be known as Tyson Brothers, Inc. Also, that on account of its having become necessary to acquire a larger factory for their rubber substitutes, they are removing to Carteret, New Jersey, where hereafter their main offices will be located.

News of the American Rubber Trade

THE APSLEY'S SILVER ANNIVERSARY.

THE Apsley Rubber Co. (Hudson, Massachusetts), issued, under date of September 1, a handsomely engraved souvenir of their quarterly centenary, of which the cover is labeled:



The marked success of the company is attributed to the adoption at the beginning of the principle, "The production of merchandise of high quality and honorable dealings in all business relation," to which the entire staff have proved loyal. The souvenir contains views of the original plant of the Apsley company, and of the present plant, reproductions of which appear on this page.

The last INDIA RUBBER WORLD, (page 445), mentioned the distribution of presents by President Apsley to all employes at the factory at Hudson. More recently, on a visit to Chicago, Mr. Apsley made similar presents to the staff of the Rubber Manufacturing and Distributing Co., of which he is also president.

FIRE IN A RUBBER FACTORY.

At the plant of the Rubber and Celluloid Harness Trimming Co., (Newark, New Jersey), fire broke out on the afternoon of September 11, from some cause yet unknown, causing a loss of from \$200,000 to \$250,000. The fire began in the machine building and extending to adjacent structures stored with materials. It did not reach the department in which the rubber harness trimmings are manufactured, so that with the adjustment of losses the company were enabled to proceed at once to fill orders in their harness department. Some parts of the building in which their Rubberset brushes are manufactured were damaged, making necessary a delay of a week or ten days in the work of this department. The loss is reported to have been mainly on new machinery lately installed by the company.

EXTENSION OF THE EMPIRE RUBBER FACTORY.

THE Empire Rubber Manufacturing Co. (Trenton, New Jersey), in view of the large increase in their business this year, have been compelled to add still further to their factory. They are making a three-story addition to their main mill room building, 40 x 70 feet; putting up a new tire shipping and stock room, three stories, 40 x 80 feet; and erecting a garage for the accommodation of their patrons and the cars used by their employes. Besides, they are adding a second story to their office building, 40 x 100 feet, the entire second floor to be devoted to the accounting department.

STEEL CALENDER STOCK SHELLS.

THE demand for "Universal" steel calendar stock shells [see THE INDIA RUBBER WORLD, June 1, 1910—page 331] is reported to be growing so rapidly that the maker, W. F. Gammeter, of Cadiz, Ohio, has been compelled to double his floor space, and is still crowded for room. More than 8,000 of these shells have been installed in rubber factories since March 1 last.

JAMES BOYD & BROTHER—REMOVAL.

ANNOUNCEMENT is made by James Boyd & Brother, Inc., (Philadelphia), of the removal of their sales department to Twenty-fifth and Wharton streets, where it will be combined under one roof with the factory and warehouse. It is anticipated that through thus consolidating their organization they will be

better equipped to serve their customers. The firm will continue to represent, as selling agents, the Electric Hose and Rubber Co., and the Eureka Fire Hose Manufacturing Co., and carry a complete stock of fire protection equipment and mechanical rubber goods. Their factory is devoted to fire extinguishing apparatus.

COMBINATION IN THE RETAIL DRUG TRADE.

THE rubber druggists' sundries trade is likely to be very much interested ultimately in the combination which is taking place in the retail drug interest in New York City. A new corporation has been formed, under the laws of New York, under the style Riker-Hegeman Co., with an authorized capital of \$15,000,000, of which \$5,000,000 is in preferred shares. The businesses combined are those of William B. Riker & Sons Co., dating from 1846, and Hegeman & Co., operated under the present name since 1875, but for many years earlier under other names. The combined business will control 58 retail drug stores, a few of which are located outside of New York. The annual sales are estimated at \$9,000,000, which covers a very great distribution of goods at retail. The Riker stores particularly have always paid close attention to their rubber sundries department, and have been large sellers of this class of goods. It is to be presumed that the same policy will be adhered to by the enlarged company.

OFFICERS OF THE H. O. CANFIELD CO.

THE list of officers of The H. O. Canfield Co., manufacturers of mechanical rubber goods at Bridgeport, Connecticut, is at present constituted as follows:

President—A. H. CANFIELD [former vice president; succeeds the late H. O. Canfield.]

Vice president and treasurer—G. E. MELLUS [formerly treasurer only.]

Secretary—H. B. CANFIELD.

The above, with T. W. Bassett, of New York, and John S. Pullman, of Bridgeport, constitute the board of directors.

NORTH BRITISH RUBBER CO. IN CANADA.

THROUGH a regretted oversight within the offices of THE INDIA RUBBER WORLD, the advertisement of The North British Rubber Co., Limited, has been printed recently with an incomplete address for their Toronto branch. It should read: 43, Colborne street, Toronto, Ontario, Canada.

TIRE TRADE NEWS.

THE Fisk Rubber Co. (Chicopee Falls, Massachusetts), have opened branches in Providence, Rhode Island; Rochester, New York; and Oakland, California. The Fisk company now have 20 branches, scattered among 14 states.

THE C. A. Shaler Co. (Waupun, Wisconsin), manufacturers of portable electrical vulcanizers for tires, have acquired the patent rights and business of the Stitch-in-Time Vulcanizing Co. (Topeka, Kansas), manufacturers of a gasoline heated vulcanizer of the portable type.

MR. D. B. Nally, long connected with the tire trade in New York and the adjacent territory, has joined the selling forces of the Pennsylvania Rubber Co. (Jeannette, Pa.)

MR. WILEY F. WEST has been appointed manager of the St. Louis branch of The Firestone Tire and Rubber Co. (Akron, Ohio). He comes from Atlanta, Georgia, where he secured valuable experience while managing the branch store of another tire company.

Owing to important developments with the deal for the American rights for the pneumatic tire filler, *The India-Rubber Journal* notes the departure for the United States of Mr. Bertram E. Foster. It is understood that an important American company have agreed to take up the Pneumatic invention, and to establish factories for producing the material.

NEW INCORPORATIONS.

ELECTRO-CHEMICAL Rubber and Manufacturing Co., August 6, 1910, under the laws of New Jersey; authorized capital \$200,000. Incorporators: Leo Daft, Rutherford, N. J., Aubrey H. Martin, Short Hills, N. J., Charles E. Haydock, No. 26 Broad street, New York, and William M. Clark, No. 52 William street, New York. Formed to develop commercially a process for the attachment of rubber to metals, invented by Leo Daft. The effect is secured by the electro deposition of a special alloy having a strong affinity for rubber during and after the process of vulcanization.

S. & S. Manufacturing Co., August 23, 1910, under the laws of Illinois; capital \$35,000. Incorporators: Clarence B. Shaffner, No. 1508 Ashland boulevard, Chicago, Benjamin M. Schaffner, and George Hadjeh.

Badger Tire Repair Co., June 27, 1910, under the laws of Wisconsin; capital \$5,000. Incorporators: Burt A. Masee, W. L. Rumbach, and William A. McMillan. Location: Milwaukee, Wis.

Nonskid Leather Cover Tire Co., August 26, 1910, under the laws of California; capital \$10,000. Incorporators: E. S. Lack, Los Angeles; Fred Stange and Zella N. Stange, El Monte, California. Location: Los Angeles.

Peerless Tire Co., September 3, 1910, under the laws of New Jersey; authorized capital \$25,000. Incorporators: Stewart Browne, No. 1 West Eighty-first street, New York; George Bazin, No. 3609 Broadway, New York; and Luciano L. Rubiro, Hackensack, N. J.

The Interchangeable Rubber Heel Co., August 4, 1910, under the laws of Massachusetts; authorized capital \$50,000. Incorporators: Oscar A. Campbell, No. 140 Eaton street, Brockton; George L. Adams, No. 50 Holman street, Attleboro; and Joseph E. Worcester, No. 1870 Beacon street, Brookline—all in Massachusetts.

Barlow and Burns Elastic Webbing Co., July 26, 1910, under the laws of New Jersey; authorized capital \$25,000. Incorporators: Richard Barlow, Thomas P. Burns, and George H. Barlow—all of Trenton, N. J.

Easthampton Elastic Webbing Co., August 1, 1910, under the laws of Massachusetts; authorized capital \$25,000. Incorporators: Hermann Eger, Albert M. Kuhn, and Ernest F. Kuhnert, all of Easthampton, Mass.

Lincoln Webbing Co., August 23, 1910, under the laws of Massachusetts; capital \$25,000. Incorporators: Arthur W. Smith, Brockton; George A. Lapham, of New Dorchester; and George G. Allen, Arlington—all in Massachusetts.

Schaefer Rubber Co., incorporated in Ohio, in 1906, with an authorized capital of \$50,000, was admitted to do business in Michigan in August 5, 1910. The principal office it at No. 120 East Fourth street, Cincinnati, Ohio.

Walk Auto Tire So., September 9, 1910, under the laws of Delaware; authorized capital \$125,000. Incorporators: F. R. Hansell, Philadelphia; George H. B. Martin and S. C. Seymour, Camden, New Jersey.

Cuyahoga Rubber Co., September 1, 1910, under the laws of Ohio; capital \$10,000. Incorporators: W. E. Young, R. L. Kryder, Minner Ragle, Marion Goay, and G. B. Motz.

A. Hoch Rubber Co., September 10, 1910, under the laws of New Jersey; authorized capital \$100,000. Incorporators: Adam Hoch, Charles M. Adair, Jacob Hoch—all of Newark, New Jersey—and Eugene S. Robinson, St. George, New York.

Polack Tyre Co., September 9, 1910, under the laws of Maine; capital \$500,000. Incorporators: E. Maynard Thompson, L. H. Stevens, C. C. Ballard, F. J. C. Little, B. J. Potter, and I. S. Kearney—all of Augusta, Maine. Further details appear on another page of this issue.

Fabric Rubberizing Co., July 8, 1910, under the laws of New York; capital \$10,000. Incorporators: James S. Donough, Francis X. Donough—both of No. 80 Wall street, New York; Edward L. White, and Russell B. Reid—both of Englewood, New Jersey.

NEW INCORPORATIONS

AMERICAN Tire and Rubber Co., September 2, 1910, under the laws of Ohio; capital \$200,000. Incorporators: Frank L. Kryder, Adam Duncan, Gilbert C. Waltz, Harvey Musser, and J. R. Huffman. Further details appear in the Akron correspondence this month.

A certificate was filed August 19, 1910, with the secretary of state of Illinois, changing the name of the Peerless Tire Co. to that of Peerless Tire and Rubber Co. At the same time the capital stock was increased from \$2,000 to \$250,000, and the number of directors increased from three to five, and the scope of the corporation enlarged. Principal office: No. 1610 Michigan avenue, Chicago.

William Killion & Sons Co., June 16, 1910, under the laws of Massachusetts; authorized capital, \$50,000. Incorporators: William Killion, George W. Killion, and Homer G. Killion, all of Roxbury, Massachusetts. The Messrs. Killion control a patented rubber horse shoe pad.

UNITED STATES RUBBER CO.'S ISSUES.

TRANSACTIONS on the New York Stock Exchange for four weeks, ending September 24:

COMMON STOCK, \$25,000,000.

(The treasury of a subsidiary company holds \$1,434,000.)
Last Dividend, April 30, 1910, 17.

Week September 3	Sales 1,620 shares	High 35%	Low 33%
Week September 10	Sales 1,100 shares	High 34%	Low 33%
Week September 17	Sales 1,300 shares	High 35	Low 33½
Week September 24	Sales 700 shares	High 34%	Low 34

For the year—High, 32½, Jan. 3; Low, 27, July 26.
Last year—High, 37½, Jan. 1; Low, 27.

FIRST PREFERRED STOCK, \$39,824,400.

Last Dividend, April 30, 1910, 26.

Week September 3	Sales 145 shares	High 105	Low 105
Week September 10	Sales 400 shares	High 106¾	Low 105%
Week September 17	Sales 200 shares	High 107	Low 106%
Week September 24	Sales 200 shares	High 107½	Low 107½

For the year—High, 110½, Jan. 10; Low, 99, July 26.
Last year—High, 123½, Jan. 1; Low, 98.

SECOND PREFERRED STOCK, \$9,905,000.

Last Dividend, April 30, 1910, 13½.

Week September 3	Sales shares	High Low
Week September 10	Sales 100 shares	High 65 Low 65
Week September 17	Sales shares	High Low
Week September 24	Sales shares	High Low

For the year—High, 84, Jan. 3; Low, 59½, July 27.
Last Year—High, 89½, Jan. 1; Low, 67½.

SIX PER CENT. TRUST GOLD BONDS, \$19,500,000.

Week September 3	Sales 17 bonds	High 102¾	Low 102¼
Week September 10	Sales 8 bonds	High 102½	Low 102¼
Week September 17	Sales 94 bonds	High 102½	Low 102¼
Week September 24	Sales 26 bonds	High 102¾	Low 102½

For the year—High, 104½, Jan. 15; Low, 101¼, July 30.
Last year—High, 106, Jan. 1; Low, 102½.

TRADE NEWS NOTES.

THERE is a growing tendency in the American rubber trade to use asbestos, following the example of the German rubber manufacturers, most of whom in the mechanical lines regularly advertise asbestos products. This paragraph is suggested by the appearance in the latest mechanical goods catalogue of the National India Rubber Co. (Bristol, Rhode Island) of a number of items of packing and gaskets made of rubber and asbestos combined.

The Harmer Rubber Reclaiming Works, established recently at East Millstone, New Jersey, are reported to be running full time and in receipt of good orders.

Mr. Frank D. Balderston, manager of tennis sales of the United States Rubber Co., with headquarters in Boston, started on his regular fall trip visiting the trade as soon as the new tennis goods lists—as shown on another page of this paper—were distributed.

The manufacturers of the Blaisdell system of vacuum cleaners, while commending the quality of rubber hose used—and by the way it is reinforced by spring wire—say: "Metallic hose is recommended for school house work and is most acceptable for use in residences. This is very much lighter and is more flexible than the rubber hose."

KELLY-RACINE RUBBER CO.

THE management of this company, whose plant is at Racine, Wisconsin, has been referred to already in THE INDIA RUBBER WORLD, is calculated to have a daily capacity of 1,000 automobile tires, 3,000 bicycle tires, and 1,500 motorcycle tires, in addition to inner tubes and solid tires. The company is capitalized at \$500,000, of which THE INDIA RUBBER WORLD is advised that \$422,000 has been subscribed by substantial local business men. The officers of the company are: Charles F. U. Kelly, president; Frank L. Mitchell, vice president; Stuart Webster, treasurer; John H. Dwight, secretary; and William Seward, general factory manager.

WOVEN STEEL HOSE AND RUBBER CO.

ONE of the most interesting and attractive catalogues in connection with rubber hose recently issued is that of the Woven Steel Hose and Rubber Co. (Trenton, New Jersey), who are manufacturers of a high grade of rubber hose, armored with woven steel under a patented process which has met with much favor in the trade. The same company also offers an attractive list of steam, hydraulic, ammonia, and air packings. [5½" x 8", 40 pages.]

A NEW FIRM IN CRUDE RUBBER.

A COPARTNERSHIP has been formed, as from September 12, under the name of Schaumann, Talcott & Patteson, to conduct a brokerage business in foreign and domestic raw products, and especially South and Central American and Mexican rubbers, and balata. The members of the firm are Gustave Schaumann, Frederick L. Talcott, Jr., and Thomas A. Patteson, all of whom have had business relations for several years past with some of the largest import houses in New York. The location of the firm is No. 61 Beekman street, New York.

RUBBER SUBSTITUTE TRADE.

WILLIAM H. SCHEEL (No. 159 Maiden lane, New York), in addition to 25 or more grades of rubber substitutes, is importing German barytes, English terra alba, Italian talc, and French oxide of zinc; also powdered and flake litharge, as well as domestic earths, clays, and fillers. Mr. Scheel is the virtual owner of Tripolite lakes in Nova Scotia, and can supply fossil flour in any quantities desired.

FIRE HOSE FOR NEW YORK CITY.

THE fire commissioner of New York city advertised for sealed bids for furnishing and delivering fire hose for his department, to be opened on September 15, as follows:

For the boroughs of Brooklyn and Queens 30,000 feet of 2½ inch rubber hose.

For the boroughs of Manhattan, The Bronx, and Richmond 20,000 feet of 2½ inch rubber hose.

For the boroughs last named 10,000 feet of 3 inch rubber hose.

Contracts for the whole amount of hose called for have been awarded to The B. F. Goodrich Co. of New York at \$1.18 per foot for the 2½ inch and \$1.66 per foot for the 3 inch hose. The New York fire department advertised for the same amount of hose, inviting bids to be opened on June 16 [see THE INDIA RUBBER WORLD August 1, 1910—page 401], when the only bidder was the H. W. Johns-Manville Co. The fire department advised THE INDIA RUBBER WORLD that the company named, "failing to comply with the specifications required, their proposal was rejected." The specifications under which the new award has been made differ in several respects from those advertised on June 16.

NEW FACTORY AT WEBSTER.

THE transfer is reported at Webster, Massachusetts, of a factory building and adjoining land to the Webster Felt and Rubber Co., mentioned in the last INDIA RUBBER WORLD (page 444). Henry C. Richardson, the inventor of a combined felt and rubber boot is stated to have transferred to the company \$17,000 worth of machinery owned by him in Canada, and the manufacture of these boots is locally looked for as soon as the machinery can be moved. Arthur H. Racicot is treasurer of the corporation.

TRADE NEWS NOTES.

THE Diamond Rubber Co. (Akron, Ohio) are mentioned as having made a single shipment of over 125,000 feet of their rubber covered wire and cable for the equipment of the new \$500,000 plant of the Marathon Paper Co., at Rothschilds, Wisconsin—the first paper mill in the United States erected for electrical operation solely.

Among the visitors at Colombo, Ceylon, during the past months was mentioned Lieutenant T. G. R. Pierson, of Mansfield, Ohio, who is studying rubber cultivation preparatory to planting in the Philippine islands.

The suit brought by the Buffalo Specialty Co. (Buffalo, New York), against Patrick F. Peters (Natick, Massachusetts), in the United States circuit court for the district of Massachusetts, alleging infringement of the patent granted to Charles E. Duryea for the tire puncture filling compound "Neverleak," has resulted in a decision in favor of the plaintiffs.

The Westinghouse Electric and Manufacturing Co. have declared back dividends on the preferred stock, amounting to 8¾ per cent., payable in installments up to April 15 next. The regular quarterly dividend of 1¾ per cent. is payable October 15.

Morgan & Wright (Detroit, Michigan), have opened a branch in Denver, Colorado, at No. 217 Sixteenth street, for the sale of their tires in that territory, in charge of James Maginnis and Henry Althens.

The Fisk Rubber Co. of Texas has been organized by local capital at San Antonio, to handle Fisk tires in that state. In addition to headquarters in San Antonio, distributing depots will be maintained in Dallas and Houston.

The eminent French traveler and scientist, Auguste Chevalier, whose contributions to the world's knowledge of African rubbers have been so important, is reported to have nearly lost his life recently from a snake bite. He was saved when in a desperate condition by treatment with the Calmetta serum.

The International Aviation Meet, to be held October 22-30, at Belmond Park, Long Island, New York, promises to be the most spectacular and interesting aero meet ever held. It is to be under the auspices of the Aero Club of America, which is the aviation section of the Automobile Club of America. It is expected that about 30 aviators will take part, of which at least a dozen will come from Europe. The International Trophy event, for the Gordon-Bennett cup, will occur on October 29.

The B. F. Goodrich Co. (Akron, Ohio), state that they are manufacturing garden hose at the rate of 6,000,000 per annum, and other types of hose in proportion. They devote exclusively to their hose manufacture a five story building 400 x 60 feet.

About 100 members of the force of the Fish Rubber Co. (Chicopee Falls, Massachusetts), had an outing on September 10, a principal feature of which was a clambake prepared by some of the women employes of the company.

The Firestone Tire and Rubber Co. (Akron, Ohio), have removed their branch in Los Angeles, California, to a handsome new building erected for them in that city at No. 1239 South Olive street. Mr. J. F. Lemon is manager in charge.

Mr. Burton R. Parker, who has assumed the duties of advertising manager of the Willyss-Overland Co., automobile manufacturers, at Toledo, Ohio, was connected some time in a similar position with the Hartford Rubber Works Co., and later with the Michelin Tire Co.

DIVIDENDS DECLARED.

THE directors of The Rubber Goods Manufacturing Co. declared the regular quarterly dividend of 1¾ per cent. on the preferred stock, payable September 15 to holders of record September 1.

The Walpole Rubber Co. (Walpole, Massachusetts), have declared the regular quarterly dividends of 1 per cent. on the common stock and 1¾ per cent. on the preferred stock, payable October 15 to holders of record on October 1.

NEW PRESIDENT FOR THE SYRACUSE RUBBER CO.

The directors of the Syracuse Rubber Co. (Syracuse, New York), have elected J. Henry Glismann, president, treasurer, and general manager of the company, succeeding Frank C. Howlett, whose death was reported in the last INDIA RUBBER WORLD (page 427). Mr. Glismann was with Mr. Howlett for about 25 years, and for several years latterly had been assistant treasurer of the company.

THE DERBY RUBBER CO. BUSY.

The Derby Rubber Co. (Derby, Connecticut), were reported recently to be very busy, their reclaiming plant being run 23 hours a day, Sunday only excepted. In addition to their regular manufacturing work, they have been installing extensive improvements. Some additions to the plant soon to be utilized are designed to double the output.

MR. CORSON NOT "LATE."

THROUGH an inadvertence, Mr. H. C. Corson was mentioned in the September issue of THE INDIA RUBBER WORLD, as the late Mr. Corson. That gentleman is not "late" in the sense that he is deceased, and, according to recent report, he is not even tardy, and is in every way his old time, prompt, vital self.

LECTURES BY THE EDITOR.

MR. HENRY C. PEARSON, Editor of THE INDIA RUBBER WORLD, on the evening of September 15, gave an illustrated lecture on "The Rubber Producing Countries of the World," before the Pascommuck Club, at Easthampton, Massachusetts.

On the evening of September 23, at Akron, Ohio, Mr. Pearson delivered an illustrated lecture on rubber as the concluding feature of a two days' conference of the officers, managers, and salesmen of the Firestone Tire and Rubber Co., following a banquet at the Portage Club, presided over by President Firestone.

PERSONAL MENTION

MAJOR ARLINGTON U. BETTS, late governor of Albay province, is mentioned by the Manila Times in a review of conditions in the Philippines as "the man who developed the Albay coal fields." Albay produces more coal than all of the rest of the islands, and a single company organized in this interest is capitalized at \$3,000,000. Mr. Betts, at one time a rubber manufacturer at Toledo, went to the Philippines as a private soldier in an Ohio regiment.

Mr. William F. Mayo, of William F. Mayo & Co., of the Boston rubber footwear trade, accompanied by Mrs. Mayo and their son, Mr. William H. Mayo, returned recently from a lengthy visit to Alaska.

Mr. Isaac B. Kleinert, founder and president of the I. B. Kleinert Rubber Co. (New York), on the occasion of his eightieth birthday, recently, as usual on this anniversary made a handsome cash donation to the I. B. Kleinert Employés' Benovolent Association.

Mr. Charles R. Flint, who arrived in New York from Europe during the month, is mentioned in foreign newspapers as having acquired the agency for the United States for the Laubeuf type of submarine boat, with the idea of submitting the same to the United States government in connection with its specifications recently issued. The authorities at Washington advise THE INDIA RUBBER WORLD that these specifications are of a confidential nature, intended for prospective bidders only, and cannot be made public.

Monsieur Delcourt, of the important rubber shoe importing firm of Haillet, Delcourt & Cie., of Valcienne, France, and Péruwelz, Belgium, were in America during the past month, for the purpose of meeting representatives of leading manufacturers.

A considerable use for rubber is involved in supplying tubing for spraying machines for farms and gardens, the use of which is coming to be regarded as essential in many places. Such sprayers are made by the Brandt Manufacturing Co. (Hastings, Minnesota),

NEW TENNIS SHOE LISTS.

UNDER date of September 1 the United States Rubber Co. issued a new list of tennis, yachting, and gymnasium shoes. Net prices are as follows [last year's prices are noted in parenthesis]:

VACATION BRAND. *

[Extra heavy, red rubber soles.]

	Balmorals.	Oxfords.
Men's	\$1.30 (\$1.25)	\$1.15 (\$1.10)
Boys'	1.25 (1.20)	1.10 (1.05)
Youths'	1.15	1.00
Women's	1.20	1.05
Misses'	1.15	1.00
Children's	1.10	.95

YACHTING BRAND. *

[Leather insoles. Cartons.]

	Balmorals.	Oxfords.
Men's	\$1.20 (\$1.00)	\$1.05 (\$0.90)
Boys'	1.10 (.95)	.95 (.85)
Youths'	1.00 (.85)	.85 (.75)
Women's	1.05 (.90)	.90 (.80)
Misses'	1.00 (.85)	.85 (.75)
Children's	.95 (.80)	.80 (.70)

NATIONAL BRAND. †

[Leather insoles. Cartons.]

[Red rubber soles. Black rubber soles 10 cents less.]

	Balmorals.	Oxfords.
Men's	\$1.10 (\$1.00)	\$1.00 (\$0.90)
Boys'	1.05 (.95)	.95 (.85)
Youths'	.95 (.85)	.85 (.75)
Women's	1.00 (.90)	.90 (.80)
Misses'	.95 (.85)	.85 (.75)
Children's	.90 (.80)	.80 (.70)

CHAMPION BRAND. †

[In bulk.]

	Balmorals.	Oxfords.
Men's	\$1.72 (\$0.68)	\$0.62 (\$0.58)
Boys'	.90 (.60)	.50 (.50)
Youths'	.90 (.54)	.50 (.44)
Women's	.62 (.55)	.52 (.45)
Misses'	.56 (.50)	.46 (.40)
Children's	.52 (.45)	.42 (.35)

GYMNASIUM BRAND. †

[Leather insoles. Cartons.]

	Balmorals.	Oxfords.
Men's	\$0.90 (\$0.85)	\$0.80 (\$0.75)
Boys'	.80 (.75)	.70 (.65)
Youths'	.70 (.65)	.60 (.55)
Women's	.75 (.70)	.65 (.60)
Misses'	.70 (.65)	.60 (.55)
Children's	.65 (.60)	.55 (.50)

BATHING SHOES. ‡

[In bulk.]

Men's	\$0.47 (\$0.45)
Boys'	.42 (.40)
Youths'	.42 (.40)
Women's	.42 (.40)
Misses'	.42 (.40)
Children's	.37 (.35)

BASKET BALL SHOES.

[Pure gum. Extra thick suction soles.]

[Not listed in 1909.]

Men's	\$3.45
Boys'	3.30

* White or brown duck.

† White, black or brown duck.

‡ White or black duck.

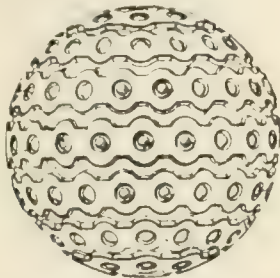
In addition to the tennis goods marketed under the brands of the United States Rubber Co., are brands catalogued by Good-year's India Rubber Glove Manufacturing Co. and the Lycoming Rubber Co. (subsidiary companies), which, while under different brands, and not following closely the prices quoted in the above lists, show about the same advances over last year's prices. All prices, by the way, are subject to change without notice.

New Rubber Goods in the Market.

KEMPSHALL'S NEWEST GOLF BALL.

THE amazing activity of Mr. Eliezer Kempshall as a golf ball inventor has been referred to already in these pages.

It is much to his credit that he has been able to find the money to pay for the great number of fees which have been necessary to meet the requirements for the Kempshall patents at Washington and London, not to mention the other great capitals of the earth. Not so long ago we described in these pages the "Flat Bramble" golf ball. Now is to be mentioned a

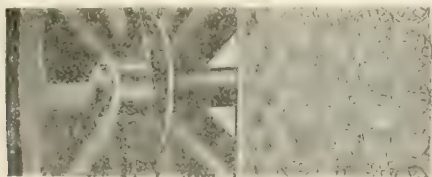


KEMPSHALL GOLF BALL.

new type of the Kempshall output. Although the inside of the new ball is similar to others of the same make, the outside is marked by a series of wavy bands, separated not by the usual little round knobs, or "bramble," but by circular recesses in which are minute "protuberances." This design is covered by the United States patent No. 922,773. [The Kempshall Rubber Manufacturing Co., Arlington, New Jersey.]

THE BRICTSOON TIRE TREAD.

THE construction of this new tire tread involves an outer layer of specially tanned and very pliable chrome leather. Next to the outer chrome leather are five plies of cotton tire fabric. Inside of these is another layer of leather. Through the outer leather and the five plies of cotton are driven the steel stud and steel rivet clinched into the layer of leather which follows the tire fabric and then there is another layer of leather which



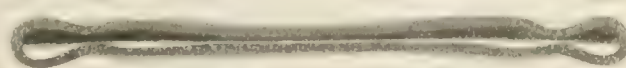
THE BRICTSOON TIRE TREAD.

covers these clinched ends of rivets and studs and prevents them from coming into contact with the rubber tire. The ends of the outer layer of chrome leather are skived or sliced thin where they are placed between the rubber tire and rim. This does away with any possibility of thick ends which might crumple up, and makes possible a snug fit of the Brictssoon tread over the rubber tire. [The Brictssoon Manufacturing Co., Inc., Brookings, South Dakota.]

BI-LATERAL HOSE.

THE "bi-lateral" type of hose now being marketed is claimed to be more durable than the ordinary pattern, as the new construction obviates the tendency to crack at the two places where the jacket bends, which disposition is caused by compression. The compression of the lining is occasioned by changing from the arc of a circle that measures $2\frac{1}{2}$ " across to one about the size of an ordinary lead pencil, and which causes the rubber to lose its moisture and dry out much quicker at the circle point than in other parts of the lining. The compression also causes

the two to crease which eventually results in a crack. The bi-lateral improvement leaves the rubber free at the two points where the bend takes place in the jacket. When the hose flattens the rubber gets from "in under," and as it is not attached to the jacket, it takes three distinct curves, which relieves it from all compression and crease. [The Bi-Lateral Fire Hose Co., Chicago.]



BI-LATERAL HOSE.

that was condensed at two places so that the tube will be sufficiently large for the jacket consists in merely straightening out the three curves. There is no stretching or elasticity demanded at these two points because there is no loss or compression when the hose is flattened. [The Bi-Lateral Fire Hose Co., Chicago.]

"GOOD SAMARITAN" HOT WATER BOTTLE.

THIS popular type of hot water bottle, made under the process of Mr. Frederick J. Gleason, is molded from one piece of rubber without seams or joints or cement and without the use of wire in its construction. Its hollow disk shape and thin model make it



"GOOD SAMARITAN" HOT WATER BOTTLE.

pillowlike and comfortable to lie upon. It is referred to as the only hot water bottle which fits every part of the body. The ten inch two quarts size retails for \$2.50. [Walpole Rubber Co., No. 185 Summer street, Boston.]

NOVELTIES BRIEFLY MENTIONED.

A NEW line of footwear specialties in which sponge rubber is the active principle includes a hygienic cushion arch support made with a Russia calf top, a rubber sponge center, and ooze calf bottom. The company making these is turning out a somewhat unique line of soles in red, black and white rubbers of different grades. [Essex Manufacturing Co., Inc.]

A company in the west has manufactured a "metal hot water bag" that is claimed to be superior to those made of rubber. In shape this "metal bag" resembles those of rubber. It is flexible, but will not stretch. There are two covers, the outer one of soft cloth, easily removed when the whole force of the heat is de-

sired. Boiling water, it is said, can not injure the bag, nor is it breakable. Odorless and cleanly are among some of its many other claims. It is also claimed to be the perfection of hot water bottles.

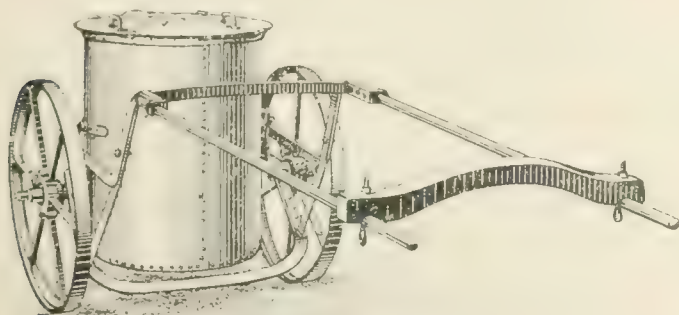
A recent addition to the household is the Rubber Cloth Wringer. Among other claims for this particular type of wringer is that it is impossible for grease or oil to get on to the rubber rolls or on the clothes. It is also claimed that it allows the use of a roll $\frac{1}{2}$ inch longer, making greater wringer surface than the old style.

Heretofore the great disadvantage of the fountain pen has been the care with which it must be kept "right side up." Waterman's "Safety" pen, made for travelers, has corrected this fault, and it can be carried anywhere in any way.

One of the latest accessories for a ladies' writing desk is called "Ladies' Boudoir." It is an ornamental flat box, containing fancy circular individual boxes, filled with different sizes of rubber bands. The boxes are not only very tastefully colored but their contents has been a long felt want by the practical woman. [The B. F. Goodrich Co., Akron, Ohio.]

PLANTATION CARTS FOR CONVEYING LATEX.

AMONG the new devices which have been developed in connection with rubber plantation requirements, one which is very practical is a latex cart such as is illustrated herewith. These carts are strongly made, in various sizes to hold, for instance,



CART FOR LATEX.

30 to 100 gallons of latex each. The tanks are of galvanized iron, with airtight lids, mounted on a rack that allows the tank to swing. The tank is easily removed and another put in place. [Boulton & Paul, Limited, Norwich, England.]

THE WATERPROOF GOODS TRADE.

IT is worthy of note that the demand for waterproof goods in Asia Minor is on the increase. Smyrna, as the port of entry, perhaps consumes the most, although about 30 per cent. goes to the interior. The value of the imports at Smyrna during a good year comes to about \$20,000. English goods are more in demand than American, as it is claimed that they are fairly cheap, and yet of excellent quality. The styles most called for are raglans and paletots.

Speaking of English goods, a new pattern of military coat has been approved by the army council. It is made by Samuel Brothers, London; it can be used either for foot or mounted service, and weighs less than three pounds.

The best method of waterproofing cloth is now under consideration at the United States war department. Numbers of inquiries and samples have been sent for of goods suitable for shelter tents, and the like.

The price of waterproof goods has increased within the last few months, so the buyer of a new raincoat need not be surprised if he has to pay rather more than he has done heretofore.

A new style of mackintosh for fall motoring will be much seen during the coming months. It is very full, reaching only to the knee, the rugs covering the lower part of the body. This coat is

fastened by large buttons, is easy to slip on and off, and is suitable for either motoring or riding.

The mackintosh will not only be popular in short lengths, but the long coat for business will be used as well. The illustration shows one of the styles made by the Hodgman Rubber Co. (New



LONG WATERPROOF COAT FOR BUSINESS.

York). It is single breasted, fly front, with regular collar, which can be worn military fashion in bad weather.

THE FIRE HOSE TRADE.

REFERRING to an address delivered at the recent annual convention of the International Association of Fire Engineers at Syracuse, New York, by Mr. William H. Merrill, of the Underwriter Laboratories, of Chicago, it was apparently calculated and intended to deliver a blow at fire hose manufacturers generally.

The evident insinuation of the address is that there is no good fire hose made, and that the good name and repute of various brands of hose affords no warrant that hose bearing such reputable brands is any better than hose that is without reputation.

Mr. Merrill asserts: "Tests show important deficiencies in all, and clearly indicate that, almost without exception, these are of such inferior quality that they should not be accepted for use in public fire departments. The most important defect and the one most commonly present relates to the quality of the rubber linings employed. - - - Other brands having inferior grades of rubber linings were provided with strong, evenly woven fabrics. - - - The best hose is frequently sold for the lowest prices and hose of the poorest quality often sells at the highest prices. - - - They serve to show that fire departments generally are not obtaining a proper quality of fire hose. - - - I may, perhaps, be pardoned for expressing the opinion that the present general practice of purchasing hose by brand of trade name, under a short term guarantee and the failure to use and enforce adequate specifications, are chiefly responsible for the present unsatisfactory condition of fire department hose."

The foregoing statements are quoted from many similar ones that the address contains, to show that the evident intention of its author is to depreciate the value of good reputation in the hose trade and the effect of the address, if it has any, will be to seriously injure manufacturers who have very valuable reputations that have been acquired by reason of the excellent service of hose supplied to fire departments during many years.

Rubber Interests in the Far East.

DIRECT SHIPMENTS TO AMERICA.

THE suggestion made by the American consul in Ceylon that an opportunity offers for an American shipping line to that island, via the Philippines, is commented on at length in the *Ceylon Observer*, which also prints interviews with local merchants on the subject. The consul in his report made a point of the fact that a shipment of 86,000 pounds of rubber had been made from Colombo to New York on a single vessel.

The *Times of Ceylon* of August 8 reported: "663 cases of rubber were shipped by the *Parisiana* (equal to 86,000 pounds) by Messrs. C. W. Mackie & Co. on Saturday last—the largest shipment ever sent from this port. The next largest was 320 cases by the same firm ten days ago per steamship *Kansas*, also for New York."

Messrs. C. W. Mackie & Co., who are mentioned as having shipped two-thirds of the rubber which has gone from Ceylon to the United States, said that they would like to see more competition in the shipping trade. They were paying 70s. [=17.03] for 50 cubic feet, and from the end of the year it would be 75s. [=18.24]. It was formerly 60s. [=14.59]. Most shippers to America, they said, were confined to three or four lines, because if they shipped through any other they lost a substantial discount. There was a "shipping ring."

The *Observer* comments: "We believe that Messrs. Whittall & Co., and Messrs. Harrisons & Crosfield ship direct to their own houses in New York; so that in their case the 'American' importers would not necessarily insist on their produce going by the American line. As these firms do a very considerable amount of tea and rubber exporting, this fact has an important bearing on the question."

AMERICAN RUBBER MAN IN THE EAST.

NEWSPAPERS in the Far East noted recently the presence in that part of the world of Mr. Edgar B. Davis, second vice-president of the General Rubber Co., which is the crude rubber buying department of the United States Rubber Co. The *Times of Ceylon* mentions the presence of Mr. Davis for several months in the Malay peninsula and Sumatra, but he was not disposed to say anything regarding the intentions of his company in the matter of growing rubber in British Asia, or its ownership of rubber concessions in Brazil. Mr. Davis was leaving for New York at the time of the publication of some interviews with him. The *Times of Ceylon* says: "Mr. Davis expects to be back in the East again in November, but the countries beyond Ceylon will again engage most of his attention."

LONDON AS THE WORLD'S RUBBER MART.

In commenting upon an interview with Mr. C. Arthur Lampard—a director in a number of rubber plantation companies in the Far East—and on correspondence elicited by the interview, the *Times of Ceylon* says: "For years Mr. Lampard has worked to help make London the rubber market of the world. It is not that yet by a long way; but it is going to be. When he first made this statement in New York to the president of the United States Rubber Trust, that gentleman poo-pooed the idea as being an unrealizable dream."

KEPITIGALLA SHARES WIDELY DISTRIBUTED.

At the annual meeting of Kepitigalla Rubber Estates, Limited (London: July 27), in answer to a question relative to the frequent fluctuations in the price of the company's shares, the chairman stated that something like 50 per cent. of the total share capital (£225,000) is held outside of Great Britain—in Switzerland, France, Germany, Holland, Belgium and Ceylon, in which latter country the estates are situated. Consequently when there are large buying orders in the English market for

Kepitigalla shares, there not being a large supply in England, the price rises rapidly. This statement was made in answer to the intimation that sudden changes in the market were due to inside manipulation.

TEN POUNDS OF RUBBER PER TREE.

At the annual meeting of the Linggi Plantations, Limited (London: May 2), the chairman stated that 750 twelve-year-old trees yielded an average of 10.7 pounds of rubber; 9,000 ten-year-old trees 6½ pounds, and 4,400 five-year-old trees an average of 2.81 pounds. The average yield was 3.69 pounds per tree in a total production of 345,219 pounds. Many of the trees, however, were tapped for the first time during the year, and only during six months.

HIGH PRICED RUBBER FOR 1911.

THE details of the forward sale of rubber by the Straits Settlements (Bertram) Rubber Co., Limited, were gone into at the last annual meeting of the company (London: July 28). They have contracted to supply monthly during 1911 two tons of rubber, at 11 shillings per pound. The transaction involves 53,760 pounds of rubber, at \$2.67½, gold. The contract was made through the well-known London rubber brokers, Messrs. William, James and Harry Thompson.

RUBBER PLANTING MISCELLANY.

YVES HENRY, director of agriculture for French West Africa, in a paper read recently at the International Congress of Tropical Agriculture and Colonial Development, at Brussels, on "*L'Hevea à la Côte Occidentale d'Afrique*," declared strongly in favor of planting *Hevea* rubber in West Africa, in view of the success attending experimental efforts to date.

Mr. R. W. Harrison, of Klang, Selangor, after twenty-five years of strenuous work in planting in the Far East, during which time he contributed notably to the development of rubber cultivation, has retired and returned home to England.

A sale is reported in the *Ceylon Observer* of a twenty acre rubber plantation for 45,000 rupees. [=£14,599.50], or about \$728 per acre. Another rubber estate of 30 acres is mentioned as having been offered at £160 [=£778.64] per acre.

In the *Times of Ceylon* a correspondent notes the decay of the "rambong," or Assam rubber trees (*Ficus elastica*) at the Peradeniya gardens. These trees are now about 75 years old, and one has reached the height of 130 feet, and the diameter at base of 10 feet. They seem to have lost their vitality, and cutting them down has been begun.

Messrs. David Bridge & Co. (Castleton, Manchester, England), made an extensive and varied display of their machinery, for the rubber industry and for rubber plantations, at the Brussels Exposition which opened in April. Fortunately the rubber exhibit of which the Bridge display formed an important part was not injured by the fire reported in THE INDIA RUBBER WORLD last month (page 437.)

THE Ceylon Planters' Rubber Syndicate, Limited, have declared a second interim dividend for the current business year, making a total of 80 per cent. The dividend for the whole of the preceding year was 100 per cent. [See THE INDIA RUBBER WORLD, April 1, 1910—page 249], this being the first of the rubber plantation companies to be able to distribute a profit of 100 per cent. in one year.

An increasing amount of attention is being given in Ceylon to the smoking of planted *Hevea* rubber, particularly since the London trade seems to demand rubber cured in this manner. Mention was made recently of a patent on a rubber-smoking process having been applied for in Ceylon by Mr. Martin Hohl, manager of the important Ceylon firm of Freudenberg & Co.

THE EDITOR'S BOOK TABLE.

NOTICE OF THE CAOUTCHOUCS OF THE SURINAM EXPERIMENTAL STATION OF THE COLONIAL DEPARTMENT OF AGRICULTURE.

THE CAOUTCHOUCS OF THE SURINAM EXPERIMENTAL STATION OF THE COLONIAL DEPARTMENT OF AGRICULTURE. By Dr. J. Sack, chemist at the Surinam experimental station of the colonial department of agriculture. [See THE INDIA RUBBER WORLD, October 1, 1909, page 21.] The chapter on *Hevea Guyanensis* is contributed by Mr. J. W. Gonggrijp, forestry agent in the colony, and that on *Hevea Brasiliensis* by Mr. A. W. Drost, assistant in the agricultural laboratory. There are some good photographic views, statistics of 35 rubber plantations, and general considerations regarding rubber cultural conditions in Surinam.

MALAISIE CAOUTCHOUC PLANTATIONS, SOCIETES FINANCIERES. Second Edition. Antwerp: Imprimerie J. E. Buschmann, 1910. [Paper. 8vo. Pp. 195.]

The lively interest in rubber plantations on the part of Belgian capitalists is indicated by the early appearance of the second edition of this directory, the first edition of which was reviewed in THE INDIA RUBBER WORLD February 1, 1910 (page 183). The book has been increased by more than 80 pages, and a map in colors has been introduced, showing the location of the plantations reported on.

OTHER BOOKS RECEIVED.

SIXTEENTH ANNUAL REPORT OF FACTORY INSPECTION, MADE to the General Assembly [State of Rhode Island and Providence Plantations] at its January Session, 1910. J. Ellery Hudson, Chief Factory Inspector. Providence: 1910. [Cloth. 8vo. Pp. 138.]

LES NOUVEAUX CAOUTCHOUCS ET LEUR VALEUR ECONOMIQUE. Manigobas de Bahia; Guayule; Palo Amarillo; Bleekrodea; Ecanda. By O. Labroy. [Extract from *Bulletin de la Société Nationale d'Acclimatation* de France, Paris, April, 1910.] 8vo. Pp. 12.

THIRTY-SECOND ANNUAL REPORT OF THE BUREAU OF STATISTICS OF Labor and Industries of New Jersey. For the year ending October 31, 1909. Camden: 1910. [Cloth. 8vo. Pp. xiv + 307.]

EXPERIMENTS IN TAPPING OF THE RUBBER TREE. BY J. A. WILSON. CH. 1. 1910. ST. LOUIS, MO. 1910. Pp. 12. [Paper. 8vo. Pp. 12.]

STATISTICAL ABSTRACT OF THE UNITED STATES, 1909. FOURTH YEAR. BY THE BUREAU OF ECONOMIC ANALYSIS. WASHINGTON: GOVERNMENT PRINTING OFFICE. 1910. [Paper. Fol. Pp. 1286.]

THE FOREIGN COMMERCE AND NAVIGATION OF THE UNITED STATES, 1909. BY THE BUREAU OF COMMERCE AND LABOR BUREAU OF STATISTICS. O. P. Austin, Chief of Bureau. Washington: Government Printing Office. 1909. [Paper. Fol. Pp. 1286.]

IN CURRENT PERIODICALS.

L'ARBRE à Caoutchouc du Tonkin, du Sud Annam (*Hevea Tonkinensis*). By Ph. Eberhardt and M. Huet. *Revue pratique des pays chauds*, Paris. X-82 (Jan., '10). Pp. 4-23; X-83; (Feb., '10). Pp. 11-13.

Nouvelles Observations sur la Préparation du Caoutchouc *Funtumia elastica* et sur son Avenir à la Côte D'Ivoire. By Aug. Chevalier. *Revue pratique des pays chauds*, Paris. X-84 (Mar., '10). Pp. 15-17.

El Cultivo del Caucho (*Castilloa elastica*). By José C. Pagliery, chief of the department of agriculture of Cuba. = *Circular of Estacion Experimental Agronomica de Cuba*, Santiago de Las Vegas. No. 27 (1909). Pp. 16-30.

La Saignée Rationnelle de l'*Hevea*. Considerations Physiologiques. By O. Labroy. [Comparative examination of the *Hevea* and the *Castilloa* from the tapping standpoint.] = *Journal d'Agriculture Tropicale*. Paris. X-106 (Apr. 30, '10). Pp. 100-102.

La Saignée de l'*Hevea* d'Après le Systeme Northway. By T. Petch. = *Journal d'Agriculture Tropicale*, Paris. X-109 (July 31, '10). Pp. 103-106.

Note sur un Nouveau Régime d'Exploitation du *Funtumia*. By C. Farrenc. = *Journal d'Agriculture Tropicale*, Paris. X-109 (July 31, '10). Pp. 204-207.

Nouvelles Recherches sur la Coagulation de Divers Latex à Caoutchouc. By V. Cayla. = *Journal d'Agriculture Tropicale*, Paris. X-110 (Aug. 31, '10). Pp. 228-230.

Le Caoutchouc et l'Avenir du Brésil. By G. Lamy-Torrilhon. = *Journal d'Agriculture Tropicale*. Paris. X-110 (Aug. 31, '10). Pp. 235-237.

THE discovery is announced by Señor Maximo de Brunn, of San Pedro Sula, Honduras, of a vine abundant in the forests there, containing rubber in great quantities. He says: "As it would not pay to tap this vine as they do the rubber trees, I am in search of a machine, which is said to be used in Brazil and Japan, to suck or pump the milk out of this plant." Señor de Brunn invites correspondence on this subject. The location referred to is in the department of Cortez—in northwestern Honduras—just east of the department of Yoro, in which the discovery of a rubber vine of apparent value has been reported already. [See THE INDIA RUBBER WORLD, May 1, 1901—page 234.]

Review of the Crude Rubber Market.

RUBBER prices at this date are largely nominal, the recent slump having been so marked that it is difficult to obtain quotations, as most of the grades listed here are without much request at present. As intimated in an editorial article in this issue, this is the dull season in the tire trade, and the demand for rubber during the past year or two has been to a very large extent for tires. Our Akron correspondent reports the discharge of many tire workers in some of the factories, and reduced working time in other factories. The time has not yet arrived for the automobile builders to decide upon their output for the 1911 season, and until this is done the more important contracts for rubber tires will not be placed with the rubber manufacturers. Meanwhile the latter are not in the market for rubber, and doubtless the feeling prevails that by abstaining from buying for the present a lower price level for rubber may be brought about. There is gossip in the trade that there are now a few low priced contracts that will soon have to be covered, and that speculative interests are concerned in getting prices down.

There was a sharp decline at the London rubber auction on September 27, both in Pará and plantation sorts. Prices were reported which would enable Ceylons to be delivered in New York at \$1.45. The Antwerp sale, on September 21, when about 200 tons out of 300 offered were sold, showed an average decline of about 1.54 francs per kilogram = 13 or 14 cepts per pound

less than the official broker's estimations. At the Havre sale, on September 21, only 20 tons were sold out of 135, and the decline was still more marked than at Antwerp.

Arrivals at Pará of rubber of all kinds (including caucho) since the beginning of the new crop season, and compared with former years, have been as follows:

	1907.	1908.	1909.	1910.
July	1,370	1,300	1,400	2,340
August	1,500	1,800	1,870	1,870
September	2,410	2,355	2,020	*1,810
Total	5,280	5,545	5,290	6,020

*Up to September 28, 1910.

Advices from Manáos up to September 29 indicate the arrival there of 3,156 tons for the crop year, against 3,105 tons for the corresponding period last year.

The exports of plantation rubber from the Far East continue to increase at a rapid rate, as shown in detail on another page. The exports since the beginning of this year from Ceylon and the Malay peninsula have averaged about 1,200,000 pounds per month, or something like 535 long tons. Not the least interesting feature in this connection is that, because of the smaller shrinkage in the Ceylons, more than the corresponding amount of Brazilian rubber is thus replaced each month.

Following are the quotations at New York for Pará grades, one year ago, one month ago, and September 30 the current date:

PARÁ.	Oct. 1, '09.	Sept. 1, '10.	Sept. 30.
Islands, fine, new.....	201@202	179@180	155@156
Islands, fine, old.....	none here	none here	none here
Upriver, fine, new.....	213@214	196@197	165@166
Upriver, fine, old.....	214@215	198@199	169@170
Islands, coarse, new.....	78@79	94@95	90@91
Islands, coarse, old.....	82@83	none here	none here
Upriver, coarse, new.....	131@132	142@143	122@123
Upriver, coarse, old.....	none here	none here	none here
Cañeta.....	96@97	95@96	90@91
Cañcho (Peruvian), ball.....	118@119	135@136	110@120
Cañcho (Peruvian), sheet.....	90@91	none here	none here

PLANTATION PARÁ.

Fine smoked sheet.....	none here	190@191	159@160
Fine pale crepe.....	218@220	174@175	145@146
Fine sheets and biscuits.....	61	172@173	142@143

CENTRALS.

Esmeralda, sausage.....	100@102	118@119	103@104
Guayaquil, strip.....	85@86	none here	none here
Nicaragua, scrap.....	99@100	110@111	100@101
Panama.....	84@85	none here	none here
Mexican, scrap.....	100@102	115@116	100@101
Mexican, slab.....	84@85	none here	66@67
Mangabeira, sheet.....	82@83	none here	80@81
Guayule.....	50@51	72@73	74@75

AFRICAN.

Lopori, ball, prime.....	128@130	162@163	130@131
Lopori, strip, prime.....	none here	170@...	125@126
Aruwimi.....	114@115	160@...	122@123
Upper Congo, ball, red.....	125@126	158@159	120@121
Ikelemba.....	none here	none here	none here
Sierra Leone, 1st quality.....	123@127	155@156	145@146
Massai, red.....	126@127	166@167	145@166
Soudan niggers.....	112@115	none here	115@116
Cameroon ball.....	86@90	95@96	73@74
Benguela.....	81@82	none here	98@99
Madagascar, pinky.....	97@98	none here	none here
Accra flake.....	23@24	none here	none here

EAST INDIAN.

Assam.....	none here	none here	none here
Pontanak.....	51@51 1/2	61 1/2@61 1/2	51 1/2@53 1/4
Borneo.....	52@53	none here	none here

Late Pará cables quote:

	Per Kilo.		Per Kilo.
Islands, fine.....	6\$300	Upriver, fine.....	no sales.
Islands, coarse.....	3\$400	Upriver, coarse.....	no sales
		Exchange.....	17 1/2 pt.

Latest Manáos advices:

Upriver, fine.....	7\$600	Exchange.....	18d.
Upriver, coarse.....	3\$600		

New York.

In regard to the financial situation, Albert B. Beers (broker in crude rubber and commercial paper, No. 68 William street, New York) advised as follows: "During September there has been a fair demand for commercial paper, mostly from out of town banks, with rates ruling at 5 3/4@6 per cent. for the best rubber names, and 6 3/4@6 1/2 per cent. for those not so well known."

NEW YORK PRICES FOR AUGUST (NEW RUBBER).

	1909.	1909.	1908.
Upriver, fine.....	\$1.87@2.00	\$1.79@1.93	\$1.84@1.96
Upriver, coarse.....	1.40@1.48	1.10@1.20	.65@.69
Islands, fine.....	1.78@2.10	1.65@1.84	.83@.90
Islands, coarse.....	.94@.98	.62@.71	.44@.46
Cañeta.....	.96@1.10	.80@.92	.51@.57

African Rubbers.

NEW YORK STOCKS (IN TONS).

August 1, 1909.....	130	March 1, 1910.....	161
September 1.....	123	April 1.....	121
October 1.....	67	May 1.....	125
November 1.....	134	June 1.....	90
December 1.....	134	July 1.....	120
January 1, 1910.....	228	August 1.....	250
February 1.....	134	September 1.....	300

Rubber Scrap Prices.

LATE New York quotations—prices paid by consumers for car-load lots, per pound—shown important changes, as follows:

	September 1.	October 1.
Old rubber boots and shoes—domestic.....	10 3/4@10 1/2	10 1/4@10 3/8
Old rubber boots and shoes—foreign.....	9 7/8@10	9 3/4@9 7/8
Pneumatic bicycle tires.....	7 @ 7 1/4	6 3/4@7
Automobile tires.....	9 1/4@9 1/2	8 3/4@9
Solid rubber wagon and carriage tires.....	9 3/4@10	9 1/2@9 3/4
White trimmed rubber.....	12 1/2@13	12 @12 1/2
Heavy black rubber.....	6 1/4@6 1/2	6 1/4@6 1/2
Air brake hose.....	5 1/8@5 1/2	5 1/4@5 1/8
Garden hose.....	2 1/2@2 3/8	2 1/4@2 1/2
Fire and large hose.....	3 @ 3 1/4	2 7/8@3
Matting.....	1 1/4@1 1/2	1 1/8@1 1/4

Statistics of Para Rubber (Excluding Cañcho).

		NEW YORK.			Total	Total	Total
		Fine and	Coarse		1910.	1909.	1908.
		Medium.					
Stocks, July 31	tons	190	13	--	209	230	286
Arrivals, August		379	323	--	702	500	816
Aggregating		575	330	--	911	730	1102
Deliveries, August		420	311	--	740	574	973
Stocks, August 31		146	25	--	171	156	129
		PARÁ.			ENGLAND.		
		1910.	1909.	1908.	1910.	1909.	1908.
Stocks, July 31	tons	485	550	250	1140	245	200
Arrivals, August		1460	1610	1490	348	510	1150
Aggregating		1945	2160	1740	1488	755	1350
Deliveries, August		1360	1250	1435	213	460	975
Stocks, August 31		585	910	305	1275	295	375
					1910.	1909.	1908.
World's visible supply, August 31.....					2,473	1,981	1,655
Pará receipts, July 1 to August 31.....					2,960	2,700	2,570
Pará receipts of cacho, same dates.....					1,210	580	600
Afloat from Pará to United States, August 31					229	none	438
Afloat from Pará to Europe, August 31.....					215	620	417

Liverpool.

WILLIAM WRIGHT & Co. report [September 1]:

Fine Pará. The market during the month has been subject to speculative manipulation. The price declined from 6s. 2 1/2d. to 7s. 9d., then reacted to 6s. 8d. 1/2. \$2.35 1/2, and has since declined to 7s. 11 1/2., which was closing value. Of course all these speculative attempts simply frightened the trade, who are not likely to buy in any quantity until steadier conditions prevail. The sooner we arrive at such a state the better. America has on the whole been quiet, and takes little interest in near rubber, though there seems to be more demand for the later months of the year.

IMPORTS FROM PARÁ AT NEW YORK.

[The Figures Indicate Weight in Pounds.]

SEPTEMBER 1.—By the steamer *Sao Paulo*, from Pará:

IMPORTERS.	Fine.	Medium.	Coarse.	Cañcho.	Total
Poel & Arnold.....	74,800	11,400	54,500	36,300	177,000
A. T. Morse & Co.....	74,400	.....	51,500	.....	125,900
Henderson & Korn.....	38,900	3,600	55,400	.....	97,900
Hagemeyer & Brunn.....	28,200	4,500	22,000	5,700	60,400
William E. Peck & Co.....	1,800	.....	4,600	.....	6,400
Total.....	248,100	19,500	188,000	42,000	497,600

SEPTEMBER 6.—By the steamer *Justin*, from Manáos and Pará:

Poel & Arnold.....	18,600	37,700	24,300	38,400	119,000
A. T. Morse & Co.....	22,900	6,700	12,000	9,300	50,900
New York Commercial Co.....	15,700	1,200	26,700	.....	43,600
Total.....	57,200	45,600	63,000	47,700	213,500

SEPTEMBER 15.—By the steamer *Polycarp*, from Manáos and Pará:

A. T. Morse & Co.....	166,300	15,600	95,900	2,400	280,200
Poel & Arnold.....	17,000	12,900	65,000	36,500	132,400
Henderson & Korn.....	23,200	.....	12,500	.....	35,700
New York Commercial Co.....	7,200	700	15,700	.....	23,700
Hagemeyer & Brunn.....	5,000	700	3,300	.....	9,000
William E. Peck & Co.....	1,700	.....	3,300	.....	5,000
Total.....	221,300	29,900	195,800	38,900	485,900

SEPTEMBER 20. By the steamer *Jacary*, from Iquitos:

G. Arnold & Co.....	19,000	.....	7,700	.....	26,700
Henderson & Korn.....	6,000	.....	.....	26,400	32,400
H. A. Arnold & Co.....	700	.....	2,400	.....	3,100
H. A. Arnold & Co.....	.....	.....	.....	.....	.....
Total.....	25,700	.....	10,500	45,800	82,000

Thompson & K. Co.	12,500	22,400	1,000
Thompson, Ed. & Co.		31,000	1,000
Thompson & B. Co.	2,000	2,000	1,000
W. H. & P. Co.	1,000	3,000	1,000
Total	16,500	68,400	4,000

1991

Peel & Arnold (Caucho).....	17,500	
N. Y. Commercial Co. (Fine)...	5,500	80,000

CENTRALS.

SEPT. 2.-By the <i>Luftania</i> Liverpool:	
Livesey & Co.....	11,500

Eggers & Heinlein.....	2,000	
New York Commercial Co.....	2,000	4,000

George A. Alden & Co.....	17,000	
Paul & Arnold.....	30,000	
Raw Products Co.....	13,500	06.50

Aug. 20. By the *Kasama*—Colombo:
New York Commercial Co..... *63,000
A. T. Morse & Co..... *40,000 *103,000

Poel & Arnold.....	100,000	
George A. Alden & Co.....	55,000	
L. Littlejohn & Co.....	150,000	655,000

J. A. Pauli & Co.....	2,500	
Iglesias Lobo & Co.....	2,000	7,000

<i>Exports:</i>		
India-rubber	305,891	\$484,566
Balata	13,208	13,579
Gutta-percha		
Guayule	32,650	21,964
Reclaimed rubber.....	74,100	9,502
Rubber scrap, imported....	3,185,540	\$296,277
Rubber scrap, exported....	21,524	37,683

State Rubber Co. (Jelutong).....	225,000	
Heabler & Co. (Jelutong).....	125,000	
W. L. Gough (Gutta-percha) ..	33,000	383,000

NEW YORK.					EUROPE.						
EXPORTERS.	Fine.	Medium.	Coarse.	Caucho.	TOTAL.	Fine.	Medium.	Coarse.	Caucho.	TOTAL.	TOTAL.
Gruner & Co.	46,410	7,140	103,645	57,420	214,615	50,626	5,484	20,584	26,170	102,864	317,479
Adelbert H. Alden, Ltd., ..	39,610	3,740	31,020	5,940	80,310	47,090	9,520	47,520	22,770	126,900	207,210
E. Pinto Alves & Co.	35,020	.....	59,730	.....	94,750	25,500	.....	.....	.....	35,500	120,250
R. Suarez & Co. ....	.....	.....	.....	.....	.....	35,633	.....	10,333	30,188	76,154	76,154
J. Marques	14,806	2,285	6,162	1,138	24,391	12,580	2,210	10,890	.....	25,680	50,071
R. O. Ahlers & Co.,	1,419	.....	1,084	943	3,446	17,608	.....	2,926	269	20,803	24,240
Scholz, Hartje & Co.,	6,460	340	660	.....	7,460	2,890	170	1,320	6,930	11,310	18,770
Sundries	3,740	1,020	11,620	.....	16,380	5,100	1,190	2,970	.....	9,260	25,640
Itacoatiara direct .....	.....	.....	.....	.....	.....	942	442	780	.....	2,173	2,173
Manaos direct	73,946	15,695	54,105	99,020	242,835	282,228	35,573	67,238	293,920	678,959	921,794
Iquitos direct	308	.....	421	16,725	17,454	.....	.....	.....	.....	.....	17,454
Total, July, 1910.....	221,719	30,220	268,507	181,195	701,641	480,197	54,589	164,570	380,247	1,079,603	1,781,244
Total, July, 1909.....	287,210	45,219	311,963	11,323	655,715	211,575	41,931	168,190	274,160	695,856	1,351,571



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Review of the Crude Rubber Market.

Rubber Receipts at Manaos for July.

[COURTESY OF MESSRS. SCHOLZ & CO.]

FROM—	1910.	1909.	1908.	1907.	1906.	1905.
Rio Para-Açu	240	368	206	234	421	225
Rio Madeira	281	295	292	180	266	219
Rio Juruá	34	18	52	31	29	37
Rio Javary-Iquitos	7	39	8	7	23	90
Rio Solimões	29	4	11	16	18	15
Rio Negro	...	2	...	...	...	4
Total	632	726	569	468	751	686
Caucho	100	314	143	101	143	88
Total	734	1,040	712	569	894	674
For Shipment from—						
Manaus	610	883	539	547	695	608
Para	124	157	173	22	199	66
Total	734	1,040	712	569	894	674

Plantation Rubber from the Far East.

EXPORTS OF CEYLON GROWN RUBBER.

[From January 1 to August 15, 1909 and 1910, compiled by the Ceylon Chamber of Commerce.]

	Pounds 1909.	Pounds 1910.
To Great Britain	409,569	753,968
To Canada	...	673,922
To United States	230,518	1,911
To Belgium	25,252	26,425
To Germany	17,349	9,980
To Italy	608	841
To Australia	7,504	1,099
To France	1,030	...
To China	1,508	...
Total	693,947	1,468,146
[Same period 1908 405,415 pounds; same 1907 267,979.]		

EXPORTS FROM THE FEDERATED MALAY STATES.

[For the first six months of 1910. Reported by the Commissioner of Trade and Customs.]

	Pounds.
Perak	975,990
Selangor	3,140,639
Negri Sembilan	1,158,954
Pahang	1,210
Total	5,276,793
Total, 6 months, 1909	2,463,241

TOTAL EXPORTS FROM MALAYA.

[From January 1 to dates named. Reported by BARLOW & Co., Singapore. Ceylon exports not included.]

	1908	1909.	1910.
From Singapore (to August 10) ..	1,210,996	1,584,234	1,912,555
From Penang (to July 25)	600,300	1,514,013	1,202,525
From Pt. Swettenham (to July 22) .....	...	...	4,405,022
Total	1,811,296	3,098,247	7,520,102

Antwerp.

RUBBER ARRIVALS FROM THE CONGO.

AUGUST 16.—By the steamer *Mandingo*:

Bunge & Co.	(Société Générale Africaine) kilos	96,000
Do	(Chemins de fer Grands Lacs)	2,500
Do	(Comptoir Commercial Congolais)	19,300
Do	(Comité Spécial Katanga)	3,500
Société Coloniale Anversoise	(Cie. Française du Haut Congo)	10,000
Do	(Sud Camerooni)	8,400
Do	(Cie. du Kasai)	80,400
L. & W. Van de Velde		3,000 222,800

AUGUST 31.—By the steamer *Bruxellesville*:

Bunge & Co.	(Société Générale Africaine) kilos	67,800
Do	(Chemins de fer Grands Lacs)	7,200
Do	(Comité Spécial Katanga)	20,000
Do	(Comptoir Commercial Congolais)	20,800
Société Coloniale Anversoise	(Belge du Haut Congo)	5,000
Do	(Cie. du Lomami)	9,800
L. & W. Van de Velde	(Cie. du Kasai)	57,000
Do		1,200
Charles Dethier	(American Congo Co.)	900 175,600

RUBBER STATISTICS FOR AUGUST.

	1910.	1909.	1908.	1907.	1906.
DETAILS.					
Stocks, July 31 ... kilos	519,965	524,512	695,551	931,356	531,441
Arrivals in August	423,246	229,260	640,712	309,667	578,122
Congo sorts	338,797	147,313	522,847	232,522	438,005
Other sorts	84,449	81,947	117,865	77,145	140,117
Aggregating	943,211	753,772	1,336,263	1,241,023	1,109,563
Sales in August	406,651	508,921	461,749	500,509	422,696
Stocks, August 31	536,560	244,851	874,514	740,514	686,867
Arrivals since Jan. 1	2,758,333	3,102,084	3,447,370	3,501,405	3,933,727
Congo sorts	2,139,120	2,325,028	2,953,211	2,986,244	2,998,843
Other sorts	619,213	777,056	494,159	515,161	934,884
Sales since Jan. 1	2,763,303	3,513,568	3,606,119	3,419,135	3,982,047

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Edited by HENRY C. PEARSON—Offices, No. 395 Broadway, NEW YORK.

Vol. XLIII. No. 2.

NOVEMBER 1, 1910.

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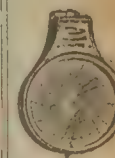
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THE INDIA RUBBER PUBLISHING CO.,

No. 395 BROADWAY, NEW YORK.

CABLE ADDRESS: IRWORLD, NEW YORK.

HENRY C. PEARSON,
EDITOR.HAWTHORNE HILL,
ASSOCIATE.

Vol. 43. NOVEMBER 1, 1910. No. 2.

SUBSCRIPTIONS: \$3.00 per year, \$1.75 for six months, postpaid, for the United States and dependencies and Mexico. To the Dominion of Canada and all other countries, \$3.50 (or equivalent funds) per year, postpaid.

ADVERTISING: Rates will be made known on application.

REMITTANCES: Should always be made by bank or draft, Postoffice or Express money orders on New York, payable to THE INDIA RUBBER PUBLISHING COMPANY. Remittances for foreign subscriptions should be sent by International Postal Order, payable as above.

DISCONTINUANCES: Yearly orders for subscriptions and advertising are regarded as permanent, and after the first twelve months they will be discontinued only at the request of the subscriber or advertiser. Bills are rendered promptly at the beginning of each period, and thereby our patrons have due notice of continuance.

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THE INDIA RUBBER PUBLISHING CO.

Entered at New York postoffice as mail matter of the second class.

TABLE OF CONTENTS ON LAST PAGE READING MATTER.

TO SOLVE THE "CASTILLOA" PROBLEM.

WITH the planting of rubber trees has come a demand for practical and scientific methods of collecting and coagulating the latex. By hundreds of experiments extending over a score of years the tapping of plantation rubber has advanced far beyond the *machete* and the *machadinho*. Particularly has this experimentation centered about the great rubber plantations in the Far East.

The wonderful productiveness of the Pará rubber tree (*Hevea Brasiliensis*) there is due not only to the presence of wound response, but a knowledge of how to tap day after day without injury to the tree. So far the *Hevea* is the only tree that has shown wound response. The others—*Castilloas*, *Funtumias*, and so on—nearly all contain primarily much more latex than does the *Hevea*. What is demanded, therefore, is a simple economical method which will extract the maximum amount of latex from such trees at one time, allowing the tree to rest as long as nature requires before the second tapping.

That this important problem may be brought to the attention of those interested in *Castilloa* culture and be solved, THE INDIA RUBBER WORLD will present at the International Rubber Exhibition in London, 1911, a handsome and valuable trophy to whomsoever may come the nearest to solving it. This cup, which is illustrated and

described on another page, is offered specifically for the solution of the *Castilloa* problem. It is well to remember, however, that if this is satisfactorily solved, a new value will be placed upon the *Sapium*, *Funtumia*, *Ficus* and gutta-perchas of all kinds—including jelutong—as well as the *Castilloa Ulei*.

Millions of dollars have been expended in the planting of *Castilloa* in Mexico and Central America, in the West Indies, and even in South America. Planting is still going on. There are climates, soils and conditions for which this tree is especially fitted, and where it thrives better than any other. To-day what tapping is done is either by the crude and destructive native methods, or by methods that are imitations of those followed in the Far East.

It is in the hope and expectation that precedents may be ignored, imitations abandoned and inventiveness and originality called upon that THE INDIA RUBBER WORLD by means of its trophy draws attention to a vital problem in rubber culture.

FOOD AND AMAZON RUBBER.

THE building of the Madeira-Mamoré railway, to reach the rich rubber fields of Bolivia, is in itself a most important undertaking, but what may prove of even more concern to the world is the influence which the sanitation work installed in connection with it may have in tropical America as a whole. Not only this, but the whole rubber trade of the world may in the end benefit from the work now centered in the Madeira-Mamoré construction camps, which camps, by the way, have lately been described in some detail in THE INDIA RUBBER WORLD.

It is no secret that the high cost of rubber from the Amazon has been due largely to the sparse population of that region, and the fact that conditions of life there have been most unattractive to European laborers. Not the least unfavorable condition has been the difficulty of acquiring food of a suitable character and at reasonable prices.

A recent issue of the Porto Velho *Marconigram* devotes most of its space to the question of food supplies in the railway construction camps, where more than 4,000 men are employed, most of whom are from other countries and a number of them professional engineers. It is pointed out in this paper that satisfactory food conditions prevail already, and that there is a continued improvement in this respect. Fresh beef is served to all the camps, being slaughtered and dressed at Porto Velho. An ice making plant is operated successfully. While the vegetables used have been derived in canned shape from the United States, the *Marconigram* mentions: "Lately we have been getting fresh vegetables from a farm about a day's sail down the river and from present indications this farm will probably be able to supply quite a quantity of fresh vegetables. Eggs are brought in by the natives."

It must be taken into account that the successful sanitation and satisfactory food supply at Porto Velho have been due to the work in progress there being on a large scale and under capable scientific and financial control. If each engineer and dirt digger had to look out for himself probably the enterprise would have ended long ago in disaster. The lesson for the rubber interest in South America is the reorganization of rubber camps on a large scale instead of the work being conducted by *seringueros* singly or in small groups. This change, by the way, is already in progress, and it is reasonable to suppose from indications already apparent that ultimately the food supplies on the better *seringaes* in the Amazon basin will compare favorably with those on farms in the United States. When this new régime becomes better established it is not to be doubted that rubber supplies will be increased, and the cost to consumers materially lessened, while still yielding an adequate profit to the producers.

THE AMERICAN MACKINTOSH TRADE.

TIME was when every lady wore a gossamer waterproof, and the hillsides about the proofing factories were covered with solarizing tables. The business was big and competition was fierce. In spite of agreements and associations prices went down until rubber garments brought about the price of the unproofed cloth. But all of a sudden the garments went out of fashion.

Then came the mackintosh, and that was overdone, and the fickle public got sick of it. For some reason or other rubber surfaced clothing got a black eye, and the business fell off. The result was that the plungers, the people who wanted volume rather than profits and those who had but little capital, dropped these lines and sought others. There were those, however, who made a certain quantity of good goods. Year by year they supplied the market, doing a fair business at a fair profit, and, as it should, the public is beginning to appreciate them.

The old-time gossamer has been replaced by light, well-made, well-fitting coats, lightly coated with rubber on the calender and vulcanized, not solarized. Sometimes the thin coating of rubber is on the surface; sometimes the outside is fabric, with the rubber inside. The mackintosh manufacturer has called in the cloak cutter and the ladies' tailor, and style and fit are beyond criticism. As for the rubber coat, nothing ever really took its place and it has come into its own again.

This is why the proofing plants are busy everywhere, and the mackintosh and clothing departments in the rubber factories are working full time.

IS SENATOR ALDRICH IN THIS?

THOSE American newspapers whose conductors appear so susceptible to pain in the stomach at any indication of prosperity in their own country—

always suspecting the same to be due to tinkering with the tariff by some man in public life—are in danger from apoplexy if they should happen to see some recent reports on the Congo rubber trade. Happily we may be spared any such unfortunate experience, since what has developed in this school of journalism in reference to the Bristow-Aldrich dispute over crude rubber suggests astigmatism among the editors wherever ordinary business facts are involved, however clearly they may be able to read a baseball score.

We all know how the New York *World* type of newspapers went up in the air when a company in the business of producing crude rubber in Mexico began, after several years, to pay dividends at the rate of 7 per cent. a year. But now comes the Compagnie du Kasai, a Belgian concern trading in African crude rubber, with a dividend of 520 per cent. on the common stock for the last year, after having paid comfortable dividends on its preferred and common stock during all the preceding years. It may be mentioned, incidentally, that the net profits of the Kasai company during its eight years of existence have totaled \$6,174,447, and the capital stated is only about \$193,965. This would work out at an average annual return of about forty times the original investment.

Can it be that Senator Aldrich, while busying himself with the tariff at Washington, has also been controlling the fiscal affairs of Belgium? How else could the crude rubber business in that country be so profitable?

IS THIS A NEW "RUBBER TRUST"?

THE able Philadelphia *Record*, without giving any details to enable its readers to verify such interesting statements, delivers itself as follows:

A rubber trust has been formed, which, extending in operations from the growing of rubber trees to the making of rubber goods, makes the consumer pay all the traffic will bear. There should be a heavy and immediate reduction in the tariff duties on rubber goods. As the matter stands, consumers are unmercifully fleeced solely for the benefit of the trust. The government treasury gets little or no benefit.

Why doesn't the *Record* help the public by putting its facts before the "government treasury"?

The able Fort Fairfield (Maine) *Review* also might benefit "the plain people in this country and other countries" by showing its hand. Here is what the *Review* says:

The price of india-rubber has doubled in the past year. The great demand for rubber in making automobile tires is a principal reason for this advance, but the fact that rubber now is mostly controlled by a trust is also a powerful cause in the advance. How long will the plain people in this country and other countries submit to robbery by the favored few controlling the trusts?

How does it benefit the editors of our esteemed daily contemporaries to keep concealed under their hats such momentous information, the revelation of which might prove helpful to so many people?

SOMEBODY HAVING STARTED A REPORT ONE DAY of the failure of the rubber plantation at Santarem, up the Amazon, and no attempt having been made to contradict it, the story is still going the rounds, making a convenient "filler" for those travelers who write their observations without taking the trouble

to verify anything. The Santarem plantation is a private enterprise, formed by Americans—the Riker brothers—who landed in Brazil with limited capital, and who went into rubber planting against the judgment of all their neighbors. One indication of their success is the sale of part of their property to a \$500,000 London company, whose prospectus enlarges upon the merits of the Santarem district as a field for rubber planting, as demonstrated by results already attained. It may be of interest to recall that all the *Hevea* planted in the Far East is derived from the original seeds collected by Mr. Wickham from up the Amazon, the native habitat of this species. Mr. Wickham, by the way, had back of him the inexhaustible resources of a great government. There is no telling what the results might have been had Mr. Riker, instead of his limited private resources, been supported by such powerful influences as were at the command of Mr. Wickham. At any rate the American experiment in rubber planting at Santarem is of much interest, and our readers, we are sure, will be pleased to read the report on it which appears in another part of this paper.

WELLMAN'S FAILURE TO CROSS THE ATLANTIC in his dirigible balloon has one point of interest for the rubber industry. One more rubber enveloped flying apparatus has been lost, and somebody is sure to order another in its place, whether or not the purpose is to cross the ocean. Count Zeppelin's disasters in Germany, however regrettable in themselves, have given little regret to the rubber companies, who have been called upon repeatedly to supply fabrics for new dirigibles for the doughty adventurer. On the other hand, when we begin to have flying machines that will last a lifetime, the cost of crude rubber may fall still lower.

WHY DO CANADIAN CONSUMERS OF RUBBER GOODS prefer a high tariff on imports to a lower tariff? The question is suggested by the tables of Canadian imports on another page, showing how much more rubber goods are bought from the United States than from Great Britain, in spite of the lower tariff on imports of British origin.

AMONG THE ADVERTISEMENTS MOST PROMINENTLY DISPLAYED in the able *Far Eastern Review* is that of "The Westinghouse Brake Co." offering air brakes. People on this side of the globe had been given to understand that the Westinghouse company, though lately in the hands of the receivers, were no longer "broke."

IT IS INTERESTING TO LEARN from the latest annual report of the Canadian department of customs that the exports from the Dominion included, under the heading "Goods Not the Produce of Canada," one automobile to the Fiji Islands, of the value of \$186. Wonder if any "sporty" Fijian is planning to compete for the Vanderbilt Cup.

DISTINGUISHING RUBBER GRADES.

ORDERS for rubber goods often call for Pará in the composition. Hitherto it has been impossible to prove the presence of this grade. The percentage of resin is usually relied upon to settle this point, Pará giving the lowest figure for this determination. Hinrichsen und Kindscher [*Chemische Zeitung*, XXXIV, No. 27] have discovered, however, that in rubber goods made from Pará to which a small amount of ceresin has been added, the resin figure is abnormally high. Experiments by them show that the resin figure for fine Pará increases two per cent. when vulcanized with 10 per cent. sulphur and 3 per cent. ceresin. In order to find whether the curing was responsible for this increase, they heated a mixture of rubber and 5 per cent. ceresin, but without sulphur, in the same way as in the previous experi-

ment. Again an increase of resin of over 10 per cent. was noticed. The resin figure is, therefore, not reliable as a means of judging the grade of rubber. The authors prefer to use for this purpose the test for optical activity of the resins. Of all the rubber resins those from Pará and Ceylon rubbers are alone inactive. This holds true for rubber, both in unvulcanized and vulcanized condition, and the activity is shown by the unsaponifiable portion of the resins only. Hence, if the unsaponifiable portion of the resins extracted from the compound, dissolved in benzol and examined in a polariscope give a reading of 0°, it is fair to assume that a Pará or a Ceylon rubber has alone been used in the composition.

F. J. MAYWALD.

NEXT YEAR'S AUTOMOBILE PRODUCTION.

IN view of the persistent circulation of rumors to the effect that the prosperity of the country was being menaced by the purchase of automobiles by many persons not able to afford these vehicles, and particularly that many were mortgaging their properties in order to buy machines, Mr. Benjamin Briscoe, president of the United States Motor Co., wrote to 24,000 bankers in the United States asking for details bearing upon this subject. He reports in *Leslie's Weekly* (New York, October 13) having received replies from 5,254 bankers, who reported 198,216 automobiles in their cities and towns. Of these only 1,254 have been purchased by the placing of mortgages and only 7,475 have been bought with borrowed money without mortgages. Mr. Briscoe adds:

"The sale of automobiles will increase during 1911 over that of 1910, in the opinion of 3,653 bankers; while 1,601 are of the opinion that sales will not increase in their localities. The latter, however, are bankers in the small towns, where the increase in population is small, which probably accounts, in part, for their opinion. Many of these letters speak in glowing terms of the various business purposes to which the automobile is applied. The bankers report that a large percentage of so-called pleasure cars are used for business purposes, such as physicians, real-estate dealers, farmers, contractors, the bankers themselves and other business men. The bankers do not hesitate to say that they consider automobiles helpful not only in ways of recreation but in business as well."

* * *

SAID an observant tire manufacturer to a representative of THE INDIA RUBBER WORLD: "The continued reports that fewer automobiles will be made next season, and that the tire business will therefore be much smaller, has to my mind no basis in fact. Last year most of the automobile factories reported in advance how many cars they would produce, and many of them exaggerated by one-half at least. The company planning to turn out 40,000 cars actually produced 20,000. This year they are saying that they will produce 20,000; and that is what they will do. As I see it, the 1911 product will be just about the same as that of 1910, so for new tires and replacements there will be a demand for even more tires than were sold in 1910. There is another feature which promises a big business. The small, light, cheap car of the runabout type has been wonderfully perfected. It is now within the reach of any man who can afford a horse and buggy, and he will buy and have no need to mortgage his home, either."

A MASSEUR recently raised his charges. Asked for a reason, he replied that he had thought it was well known that rubbers had had a boom and were in great request.

As we go to press it is rumored that a substitute for rubber has at last been discovered. It was found in a city restaurant, and was served up as a steak.—*Punch*.

JOHN HINCHLEY HART.

THE portrait on this page is that of the well-known head of the Trinidad botanical garden for so many years, who, though having retired from that position, continues active private work in the field to which he has devoted his life. Born on a farm in East Anglia, the subject of this notice was sent for his early training to a grammar school established by Lord Keeper Bacon, in the town of Botesdale, Suffolkshire, England.

A few years later he was making his way in London horticultural establishments,



JOHN HINCHLEY HART, F.L.S.

notably those of Lee & Veitch. He was next to be found in Nova Scotia, engaged in landscape and horticultural work, being one of the first to export Canadian apples to England. Returning to the old country in 1875, he was sent out in that year to join the staff of the government agricultural-horticultural department of the island of Jamaica. Here his landscape practice proved useful, and the newly acquired lands adjoining the residence of the Gov-

ernor of that colony were placed in his charge.

Next he assumed charge of the government *Cinchona* plantation, which at that date was sending into the markets all species from the delicate *C. calisaya* to the hardy *C. officinalis* of the pharmacies. His spare time was devoted to the botanical exploration of the colony, and the pages of Urban's West Indian compilations show the extent of the work he carried out, and the number of new species he added to the flora.

In 1887 Mr. Hart was sent to Trinidad as superintendent of the Royal Botanic Garden of that island, with instructions to push the new agriculture to its limit. After twenty years' work the establishment had increased to nearly three times its original size, and its reputation had become firmly fixed as among the first of its class in the world. Mr. Hart retired on the maximum pension in 1908, after which he purchased a house within sight of the botanical garden and opened an office as an expert adviser in tropical agriculture. Here the editor of THE INDIA RUBBER WORLD met him on returning from the Amazon.

Mr. Hart maintained and edited the *Bulletin* of the Trinidad botanical department, which dealt with general botanical matters, for more than twenty years, in a manner which secured for him the best exchanges of the day. In addition, he has written a standard work on cacao, which he has taken up as a specialty, besides editing a volume on the "Ferns of the West Indies" of some 420 pages. He is a prolific writer on current topics in tropical agriculture, especially those connected with fungus diseases, so destructive to tropical vegetation, and has taken a high place among students of this class of plants.

As a general all around man, it was hard to find his equal, while in special studies, on account of his mastery of his subjects, he has been placed, by some of the best authorities, on classical record. For many years he was associated with the Hon. Sir Daniel Morris, K. C. M. G., D. SC., etc., while the latter was Imperial commissioner of agriculture for the West Indies.

ADVANCE OF THE MOTOR TRUCK.

THE commercial motor vehicle is rapidly coming into its own. As mentioned already in THE INDIA RUBBER WORLD, the annual automobile show at Madison Square Garden next January will exclude commercial vehicles, but the Garden will be filled during the following week with a show under the same management devoted to motor trucks alone. Could there be better evidence of the growth in importance of the commercial motor car trade?

The progress in this new field is of importance both to the rubber tire manufacturer and the producer of rubber, whether in forest or on plantations. Business men have been studying the cost of motor vehicle service as compared with horse-drawn vehicles—and the days of horses in city street traffic are numbered. Using horses to haul freight through the streets will soon be regarded as uneconomical as walking up twenty flights of stairs to one's office instead of taking an elevator. With the horses out of the way, in New York, for example, every commercial vehicle on the streets will be equipped with the product of some rubber factory.

It is not alone the economy of the automobile truck over the horse-drawn vehicle that is to be considered. Wholesale trucking is in sight. Half the drays one sees in the street are empty. The vehicle goes out from its starting point with a load and returns empty; or it starts empty and returns with a load. In any event, half the energy, half the time, and half the cost is consumed without any load being carried. Under a wholesale trucking system, with established stations, it would be possible after a while to so arrange trips on schedule time, on which every vehicle, practically speaking, would carry loads going and coming.

Before the first Cornelius Vanderbilt started rowing a boat between Staten Island and New York there had never been any system in transferring passengers across the bay. Whoever wanted to go over had to arrange for a boat by chance, and the man at the oars might not have a passenger on the return trip. But Vanderbilt appointed hours for going and coming, so that intending passengers need have no worry about hiring boats. The same systematic Vanderbilt expanded his business of carrying passengers on water until he owned the finest steamships on the Atlantic. Later he turned his attention to transportation on land, and showed the world how to organize railway systems. To-day the Vanderbilt lines, and all other railway lines as well, carry loads of freight on all their trains, whether going out or coming in. The local freighting companies in large cities in future will do the same thing.

The Bush Terminal Company, great handlers of freight, with wharves in South Brooklyn, from and to which is an immense trucking business, are constructing in Manhattan borough, New York, at a cost of \$250,000, a central trucking station, to be connected with their wharves by a line of motor trucks, to be run on schedule time over definite routes. It is planned in time to have other central stations and branch lines of lighter vehicles, with the end ultimately of being able to serve promptly any part of the great commercial section of lower New York. There can be no doubt that the plan is practical; if it works at all, the cost of conveying freight over New York streets will be remarkably lessened, and the congestion of the streets be remedied to a very great extent.

Whatever may be the success of the particular company named here, they certainly are on the right road—and one that will require a yearly increasing amount of rubber for commercial vehicles. * * *

AN American correspondent of London *Commercial Motor* writes that the suggestion is made in the United States to apply the expression "freight automobiles" to all forms of motor cars not devoted primarily to passenger traffic.

The Editor's Book Table.

THE CRIME OF THE CONGO. BY A. CONAN DOYLE, AUTHOR of "The Great Boer War," etc. New York: Doubleday, Page & Co. 1909. [Cloth. 8vo. Pp. xi + 128. Price, \$1.]

THE declining output of rubber from what was formerly called the Congo Free State has been explained variously, but without any result in the way of bringing the production up to the former high figures. It may occur to the readers of Dr. Doyle's book that the explanation is to be found in the wholesale murder of the rubber gatherers. It may be mentioned here that the exports of rubber from the Amazon region increase steadily, though not to a large extent, year by year, but there are no reports of systematic killing of rubber workers in South America such as Dr. Doyle intimates in the case of such centers of population in the Congo as Bolobo, which Stanley credited with 40,000 population, which figure is said to have declined to 7,000. If the reports quoted in this book are to be credited, we may look to the time when the Congo country will be entirely uninhabited, and when the production of even one pound of rubber per year will be impossible.

A disappointing fact regarding this book is that it contains no record of personal observation by its distinguished author, who contents himself with quoting reports which have been familiar for years to every reader who has sought to inform himself regarding conditions in the country which forms the subject of his work. After all has been said by our author—or rather quoted by him—there is practically nothing in a shape capable of being verified by one who is disposed to get at the truth of the matter.

What is of chief interest in this little volume is the final chapter, in which it is attempted to suggest solutions of the situation which the author has outlined in the preceding pages. He holds that nothing can be hoped for in the way of improvement from the Belgian régime. There is a hint that the United States of America has some responsibility in the case, but evidently the writer does not look for aggressive action in this quarter—particularly as King Leopold attempted to "bribe American complicity" by allowing some of our citizens to form a company "to share in the unholy spoils."

The book calls for an international conference to reform the Congo. It is pointed out that France and Germany might do the world a service by adding to their African possessions slices from the Congo State. But failing all else, it is the opinion of Dr. Doyle, speaking as a Britisher, that "it is our duty, as it has often been in the world's history, to grapple single handed with that which should be a common task."

This book is interesting, as must be true of anything proceeding from the pen of Sir Conan Doyle, but we fail to see in it anything which has a very direct or practical bearing upon the rubber industry. We do learn from it, however, something which bears upon the failure of THE INDIA RUBBER WORLD to collect a certain subscription account in the assertion that "Gustav Maria Rabinck was robbed and murdered by the Congo Free State." But even this is an old story.

LE CAOUTCHOUC DANS LES COLONIES PORTUGAISES. RAP-
porteurs: Carlos Eugenio de Mello Gerales - - - et Bernardo
d'Oliveira Fragateiro - - - Lisbon: Typographia A. Editora. 1910.
[Paper. Large 8vo. Pp. 137 + maps and plates.]

THE authors of this valuable monograph are both now connected with the colonial section of the Agronomic and Veterinary Institute of Lisbon, and each has seen service in the Portuguese colonial administration in Africa. Moreover, they were members of the commission appointed by the Portuguese ministry of the marine and the colonies to represent that kingdom at the first International Congress of Colonial Agronomy held at Brussels in connection with the recent international exhibition there. The book is in French, the language of the exhibition.

The work is devoted respectively to the rubber plants, native and exotic, of Angola, Mozambique, Portuguese Guinea, and

the Princes and St. Thomas islands. As to rubber species, the authors devote attention first to the rubber derived from rhizomes (*caoutchoucs des herbes*), of which a notable example is *Landolphia Thollonii*. Then are considered the rubbers derived from the extraction of latex of vines (*lianes*). The possessions of Portugal in Africa are so scattered that they include most of the rubber plants which are native to that continent.

So energetic have been the colonial authorities of Portugal and the *consessionaire* companies developing colonial resources that practically every rubber species under cultivation in any country is now under experiment in the regions covered by this report. Not the least interesting feature of this report is the section devoted to the plant first described by Professor Gerales—locally known as "Ecanda" and botanically as *Raphionacme utilis*. There are also details regarding "potato gum," also known commercially as "alemeidina." The book embraces an important amount of statistics.

It is evident that the details under the heading "Native Rubbers of Portuguese Africa," contained in a British consular report reviewed in THE INDIA RUBBER WORLD, September 1, 1910 (page 442), were derived from the book above reviewed.

HENDRICKS' COMMERCIAL REGISTER OF THE UNITED STATES, for Buyers and Sellers. Especially Devoted to the Interests of the Architectural, Mechanical, Engineering, Contracting, Electrical, Railroad, Iron, Steel, Hardware, Mining, Mill, Quarrying, Exporting and Kindred Industries. - - - New York: Samuel E. Hendricks Co., No. 74 Lafayette street. 1910. [Cloth. Large 8vo. Pp. C+1,342. Price, \$10.]

THIS is the nineteenth annual edition of a work which has proved useful to a great number of business men in various lines. It embraces the names and addresses of over 350,000 manufacturing firms and individuals under 35,481 classifications, the mere listing of which in the index requires 100 four column pages. The work as a whole is larger than in any previous year, now embracing 238 pages of new matter. While not offered as a complete directory of any branch of industry, its lists under each general heading are sufficiently full to make the work of value for reference, to which are to be added the advantages of its being accurate and brought up to date.

IN CURRENT PERIODICALS.

RUBBER in Centraal-Amerika. By J. Alberts. = *De Indische Mercur*, Amsterdam. XXXIII-23 (June 7, '10). Pp. 441-442.

Uote sur les Hévéas Cultivés en Afrique Occidentale. = *Journal d'Agriculture Tropicale*, Paris. X-107 (May 31, '10). Pp. 129-131.

Nach den Kautschukländern. By A. H. Berkhout. [Relates mainly to the Malay peninsula.] = *Der Tropenpflanzer*, Berlin. XIV-6 (June, '10). Pp. 277-287; XIV-7 (July, '10). Pp. 348 and 357.

L'Hevea a la Cote Occidentale d'Afrique. By Yves Henry. = *L'Agriculture pratique des pays chauds*, Paris. X-87 (June '10). Pp. 442-450.

Der Kautschuk in dem Deutschen Kolonien. By Professor O. Warburg. [A paper read before the International Congress for Tropical Agriculture, in connection with the International Exhibition at Brussels.] = *L'Agronomie Tropicale*, Louvain. II-7 (July, '10), Pp. 184-192; II-8 (Aug., '10), Pp. 235-240.

Die Kautschukkultur in Mexiko. By H. Juan Ludewig. = *Der Tropenpflanzer*, Berlin. XIV-10 (Oct., '10). Pp. 516-527.

L'Exploitation du Caouchoe et la Culture des Plantes Productrices au Dahomey. By Auguste Chevalier. = *L'Agriculture Pratique des Pays Chauds*, Paris. X-88 (July, '10), Pp. 24-32.

On the Cultivation of Dwarf Rubber Trees. R. Thomson. [Relates to the advisability of planting *Manihot* species.] = *The Indian Forester*, Allahabad. XXXVI-3 (Mar. '10). Pp. 117-125.

Experiences de Rendement sur l'Arbre a Caoutchouc du Tonkin. (Tonkin. *Bleekrodea Tonkinensis*, D. et E. = *Bulletin Economique* Hanoi. XIII-82 (Jan.-Feb. '10). Pp. 1-11.

Addendum. Observations Biologiques sur l'Arbre a Caoutchouc du Tonkin (*Bleekrodea Tonkinensis*). = *Bulletin Economique*, Hanoi. XIII-82 (Jan.-Feb. '10). Pp. 12-14.

L'Hevea en Cochinchine. By E. Mathieu. = *L'Agriculture pratique des pays chauds*, Paris. X-86 (May '10). Pp. 357-380.

A BOOK for rubber planters—Mr. Pearson's "What I Saw in the Tropics."

An American Planting on the Amazon.

By D. B. Riker.

TO THE EDITOR OF THE INDIA RUBBER WORLD: In response to your request for some details regarding my rubber plantation in the Amazon valley, I am pleased to comply. First, as to its history. At the breaking out of the Civil War in the United States, my father, Robert H. Riker, resided in Charleston, South Carolina, with his family. He being a native of that state, was employed at Fort Sumter, Charleston, during the war. After the war, things being in bad condition generally, he came out here to Santarem, bringing his family. That was in 1867. He selected Diamantino, the place I am going to describe, had it surveyed, and bought it of the government, and for many years worked in sugar cane. Having mounted a large mill bought of George L. Squire, New York, he built a dam across the Diamantino creek, and in that way developed power for the water wheel to run the cane and also a sawmill. The creek comes from the foot of the Brazilian tablelands, said mountain being about a half mile from our dwelling house. Some of the rubber shown in one of the accompanying photographs is on the mountain slope.

Diamantino and Maicá, which are adjoining properties, belong to David B. Riker and Herbert A. Riker, lie seven miles south of the city of Santarem, which is located near the mouth of the river Tapajós, in sight of the Amazon, about 500 miles above Pará. There is a fine wagon road for all transportation and a

creek called Maicá navigable all the time for large launches going by the place. Our tracts of land have been increased lately to quite an extensive area. The land is fertile and especially adapted to the cultivation of rubber, sugar cane and cacao, and on the Maicá stream cattle thrive and the African water buffalo grows to perfection. There are planted on the place 80,000 Pará rubber trees (*Hevea Brasiliensis*). The principal laborers are Indians. The locality is healthy, game and fish abound, a fine breeze keeps the temperature very agreeable, and the best hard woods cover the tablelands.

In the course of time my parents died and the sister returned to Tennessee, in the United States. My brother and I continued on the place, growing sugar cane and raising cattle. About 1883 rubber rose in price and continued to rise. We planted a few thousand trees, and we were put down as fools. Everybody, including the rubber men, who claimed to know, said planted rubber would not give milk, for many reasons, they argued. Well, things jogged on as usual, and our little rubber patch was about ten years old.

We commenced to tap the trees first for the sake of doing so, or to become fully convinced whether planting the trees was really a loss of time and capital. To our surprise and satisfaction we found the yield to be quite an item, and after continuing for a while we became convinced that the cultivation of the rubber



THE RIKER PLANTATION AT SANTAREM.
[Young *Hevea* rubber on the mountain slope.]



THE RIKER PLANTATION AT SANTAREM.
[Herring bone tapping of an old *Hevea* tree.]



HERBERT A. RIKER.



DAVID B. RIKER.

tree was without a doubt one of the grandest enterprises that could be gone into; so we continued to plant. At first we made many errors and lost much time and money before we became skilled in the selection of the quality of land, and when and how to plant the rubber tree so as to obtain the best growth and the greatest yield of milk.

We have over twenty years' experience in the cultivation of rubber—not theory alone, but practical knowledge, from cutting down the virgin forest all through the processes to the smoking of the latex—and therefore have a great advantage over those who are now commencing to plant. One pound of rubber taken out here is worth many pounds taken out on the *seringaes* of the upper rivers. Here we do not have to contend with the falls, *impaludismo*, the attacks of wild Indians, the continued war with

the rubber cutters and where the Winchester and Mauser are "law." Here at Santarem we have health. Good authorities govern with justice the *município* and town, so one's rights are guaranteed. We are in direct telegraphic communication with the world, and steamers of all sizes and nations come in port and cast anchor in the blue waters of the Tapajós.

Dr. João Antonio Luiz Coelho, the present governor of the state of Pará, has had passed a law paying a premium of one milreis, or 50 cents, per rubber tree planted. Dr. Coelho has done this to stimulate the cause, for he sees the grand importance that the tree that yields gold should be cultivated. Dr. Coelho, like Washington, seeing far into the future over the heads of his countrymen, is a man of high intellectual capacity, a lover of his country and his people, a defender and lover of progress and



OLD RUBBER ON BORDER OF STREAM.



OLD TAPPED "HEVEA" TREES.



THREE YEAR OLD RUBBER AT DIAMANTINO.



DWELLING AND FAMILY OF D. B. RIKER.

industry. He is doing wonders for Pará, and some time in the future this will be the El Dorado of the world. Lands are being sought for, and rubber is the mania.

My brother and I are planting on a larger scale; this year we expect to put in 40,000 trees; we are turning all our attention to the cause. Rubber properly planted and cared for can be cut to advantage in from six to eight years. There is nothing we can embark in and be so sure of success as planting rubber in Pará soil. Once planted, the future is secure. We have sold a part of Diamantino to an English company, the Diamantino Rubber Plantations, Limited, with offices in London. But we have

reserved land for our planting that will hold many millions of trees.

DAVID B. RIKER.

Santarem, Estado do Pará, September 23, 1910.

* * *

It is interesting to note that the Messrs. Riker are no less enthusiastic now over the prospects of planting *Hevea* rubber on the Amazon than they were more than ten years ago, when they wrote us regarding their first tapping. [See THE INDIA RUBBER WORLD September 1, 1900—page 326.] The London company referred to in the above letter was registered March 5, 1910, with an authorized capital of £100,000 [= \$486,650].—THE EDITOR.

Points on the Cotton Situation.

THE WORLD'S COTTON PRODUCTION.

THE semi-annual convention of the National Association of Cotton Manufacturers, held at Portsmouth, New Hampshire, September 15-17, has been mentioned in THE INDIA RUBBER WORLD [October 1, 1910—page 18]. From further reports of the proceedings the following details regarding the production of rubber have been compiled.

India.—At a hearing given by Viscount Morley, secretary of state for India, in the British cabinet, on July 27, 1910, to a députation from the International Cotton Federation, it was stated that—

"It was to India that all the cotton manufacturing countries of the world looked for the speediest relief from the shortage of raw material, and it must also be borne in mind that India came next in importance to the United States of America as a cotton producing country. India produced nearly one-fifth of the cotton supply of the world, and although it was not suitable to any great extent for the English cotton industry, yet it would be an enormous relief if its cultivation could be so encouraged that both the quality was improved and the quantity largely increased. The development of India was of supreme importance to England. Forty per cent. of the products of the cotton manufacturers of Lancashire were exported to that great country."

It is claimed that with improved methods in India the present acreage could yield 10,000,000 bales instead of only half as much, and that it is possible for India to raise 20,000,000 bales. The president of the National Association of Cotton Manufacturers suggests that "It will be interesting to us [Americans] all to watch the developments in that country along these lines, for, while we do not use much of this cotton, it is true that the

more of it there is, the more American cotton will be available for other purposes."

[A report by United States Consul Dennison, at Bombay, states that during the five years ending in 1908-09 certain provinces—estimated to yield 75 per cent. of the cotton output of India—had an annual area under this crop of 15,659,500 acres. During the year named the cotton acreage in these provinces was estimated at 12,289,000, and in 1909-10 at 13,463,000. The estimated acreage for the present season is less than last year.]

Russia.—The production of cotton in the Russian empire is confined to certain governments in Asiatic Russia—principally in Turkestan, where conditions exist for cotton cultivation comparable with those in Egypt. Russia now supplies herself with half the cotton she uses. In 1899, of the total import of 367,000,000 pounds, 79,000,000 came from Turkestan, leaving 288,000,000 pounds to be supplied by the rest of the world. In 1908 Turkestan alone supplied 288,000,000 pounds for Russian consumption, out of the total of 582,000,000 pounds required for the factories of the empire.

Mexico.—There is a steady increase in the cotton manufacture in Mexico, owing to the growing demand for the products, yet the mills do not yet produce one-fifth of the cotton demanded by the country. A small amount of raw cotton is raised in Mexico, but not enough to supply the mills of the country.

California.—After several years of experiments with cotton in Imperial Valley (in southeastern California) the first commercial crop of about 500 acres was planted in 1909. The result is reported to have been satisfactory. From one 160 acre plantation the gross income was \$11,200, which netted the owners over \$8,000, or about \$50 an acre. On land valued at \$100 to \$150 this makes a very profitable business. When more experience

has been gained better results are expected. Thus this season about 15,000 acres were planted with the same variety, and a slight increase in length of staple has been obtained. Imperial Valley is being irrigated extensively, and climate conditions are reported most favorable for cotton. It is pointed out that local capital is not plentiful, and that it is considered that the best results will be obtained by handling cotton as the orange crop of southern California is now handled—entirely by growers' associations. With coöperation in this form the cost of cotton will be reduced to the minimum, and selling contracts can be made direct with spinners.

SEA ISLAND COTTON MARKET.

JOHN MALLOCH & Co., Savannah, report [October 14]: "During the week under review, supply has not kept pace with demand. The result, as we predicted last week would be the case under such circumstances, has been that prices have advanced rapidly, and we are now seeing a market similar to that which we had at this time last season, only in a more aggravated degree. Cotton is moving very slowly. There seems still to be a short interest here and at interior points. Farmers are bullish, and unwilling to sell. The major portion of the cotton coming to Savannah factories is ordered held, with the result that each day's offerings are very limited, and buyers have bid the market up on themselves in the endeavor to secure these small supplies. A rise of two and one-half cents in a week, as indicated by our quotations, means that nearly every order that has been accepted in the interim has resulted in a loss to the seller, and has tended to maintain the short interest which is driving the market up. The market closes to-day without any alleviation of these difficult circumstances, and until there is an accumulation of cotton here looking for buyers we do not see what is to stop the advance."

Stocks on October 14 (in bales) were as follows:

	1908.	1909.	1910.
Savannah	5,184	8,610	5,958
Charleston	2,317	1,375	398
Total	7,501	9,985	6,356

BALATA IN RUBBER GOODS.

UNTIL within recent years balata gum was in little use, except in the manufacture of balata belting. Then it was discovered to be a good substitute for gutta-percha, in the insulation of submarine cables, as well as for many other purposes. Balata has many of the characteristics of gutta-percha, and can be treated in the same way, although, principally on account of its being so intractable, it was left alone by the rubber manufacturer in favor of the more easily worked gums. Contrary, however, to the generally accepted opinion, balata can be vulcanized by itself, and while it has not the elasticity that vulcanized rubber has, it is very much stronger.

For certain purposes, therefore, it has been of great value in the manufacture of many articles. It was found by tests that where great strength was required, as in friction tests, in air-brake hose and other master car builders' requirements, balata was a good thing to use, as well as in places that had to stand the abrasion or contact with a wearing surface, as in vehicle tires. It will not give good results if used by itself; it must be used either with some of the softer rubber, as Africans or guayule, which the readers of this journal are familiar with, although it has been successfully used with fine Pará. Good results are obtained by its use in connection with reclaimed rubber, without any other rubber being used.

The writer has found the following proportions to give good results in friction for hose and belting, red and white machine tubing, and practically in everything made in the mechanical goods factory: Fine Pará 50 pounds, Accra flake 25 pounds,

block balata 25 pounds. Coarse Pará, maniçoba, or Centrals can be substituted for the fine Pará. As many pounds of this mixture are then used as would have been used of the fine, coarse, maniçoba, or Centrals. The various rubbers and balata are mixed together on a mill before being used, to insure their perfect union. I believe that this combination can be safely used by concerns making insulated wire, as well as other lines, as, for instance, the druggists' sundries line, and the boot and shoe trade, for it causes no more trouble in open heat cures than in any other way.

To summarize, balata has been and is now being successfully used in the manufacture of frictions in rubber belting and hose, solid tires and molded goods, tubing and fruit jar rings. In many of these articles it is taking the place of much higher priced rubbers, for, as before stated, it is successfully used without any other rubber, where it is used with red, white or black reclaimed stocks.

The manufacturer who uses his brains will secure by a little experimenting a rubber, or substitute therefor, that will give a result equal to that he would obtain if he were using a higher priced rubber.

In the preparation of balata by washing the same care must be used as in washing crude rubber. After washing in the regular way it will be necessary to go over the sheets, after they have hardened, and pick out the bits of bark or wood, as these, owing to the peculiar nature of balata, are harder to wash out than is the case of crude rubber.

WILMER DUNBAR.

* * *

"For ordinary compounding, or, perhaps, it is better to say amalgamating, were balata 10 cents a pound and pontianak the same figure, I should choose pontianak," said one of the most expert manufacturers of rubber recently. "Balata fools manufacturers more than any other gum. Five per cent. of it in Pará rubber will reduce the elasticity ten times more than any other cheap gum. It apparently adds strength, but it does not do it really. To prove this, stretch a piece of pure Pará rubber as far as it will go. Then measure the attenuated strand, get its cross section, and break it, measuring the breaking strain. Then stretch a strip of rubber containing balata that shows the *same measurements in cross section* under full tension as did the first sample, and you will find it breaks much more easily. It is not nearly as strong. Actually, there are very few places in ordinary rubber manufacture where balata can be used to advantage. As a substitute for gutta-percha or in admixture with it, however, it is of great and constantly increasing value."

TOO COLD, "PERHABS," FOR GUAYULE.

A FRIEND of this journal favors it with a communication which is reproduced faithfully below, but from the postmark on the letter one is inclined to think that perhaps the Guayulegras would not flourish in our correspondent's locality. A region where even the typewriting machines catch cold—see the spelling of "perhabs"—is not likely to be adapted to the cultivation of Guayulegras. The letter follows:

TO THE INDIA RUBBER WORLD, New York -

Gentlemen: I am interested in starting a Rubberplantation, specially producing Rubber from Guayulegras.

A Friend of my did give me your address telling me that perhabs you could give me some information, where I can get some litterature on this subject, and perhabs some seeds or plants.

I would be very thankfully to you, if you would be so kind and help me to it. Naturally am I ready paie any price, that you will charge me, for so doing.

Very respectfully,

AN American consular officer in a European country reports having inquiries for catalogues and lists from American manufacturers of (1) rubber goods—hot water bottles, gloves and sanitary articles; (2) special machinery for the rubber industry.

The India-Rubber Trade in Great Britain.

By Our Regular Correspondent.

IN a report made recently to the directors of the United Malaysian Rubber Co., Limited, Dr. P. Schidrowitz states that the production of 3,000 to 5,000 tons of rubber by the company from gutta-jelutong should in no way affect the balance of the rubber market. In commenting on this the *India-Rubber Journal* states that the interest

GUTTA JELUTONG.

of the statement lies in the fact that a process of substitution is about to take

place. Instead of a large quantity of jelutong being marketed, a much smaller quantity of rubber will be substituted, the elimination of the lower and the substitution of the higher grade article being all that will occur. Perhaps some people who are shareholders in plantation companies may be interested in the balance of the rubber market, but I think I am right in saying that the bulk of those who have been using the large amount of jelutong which has come on the market in recent years don't care whether a few thousand tons more of raw rubber are produced or not. They have been buying jelutong as a low grade rubber which suited their particular purpose, and they don't particularly want the purified rubber obtained from it; at any rate they have many other rubbers of similar quality to choose from. The *India-Rubber Journal* presages the entire failure of jelutong supplies for the manufacturer within a short time, and it is not at all consoling to the latter to know that an entirely different product will be obtainable instead. This need not, of course, affect the prosperity of the Malaysian Rubber company as long as it can sell its extracted rubber and residual resin at a profit. Jelutong, of course, has only had a small use in Europe, compared with America, but those who have adopted it as a cheap binding material in certain branches of the rubber manufacture are by no means pleased at the recent rise in price or at the threatened extinction of supplies. The time now seems opportune for the exploitation of other districts far removed from the Straits or Malaya, where jelutong or something closely approximating to it is known to occur.

By the way, some rather severe strictures upon the flotation and prospects of the United Malaysian company have appeared in the *Straits Times*, and been reproduced in the London *Financial News*. Moreover, correspondence following this has shown that there is an important German company working jelutong in Sumatra, and obtaining it by a special process of their own—facts which are put forward to show that the Malaysian company has by no means a monopoly of the supply.

CONSIDERING the way that the speculating boom has died down among the public it is a question whether it is worth while for financial and other papers to go on giving so much space to technical matters which up to this year have only had

RUBBER AND THE PUBLIC.

reference in the accredited organs of the rubber trade. Since the fall in the price of raw rubber commenced, and was at once followed by a fall in share values, public interest has diminished, and now one hardly hears the subject of rubber referred to in the club or the railway train. In some quarters a new boom is confidently predicted when American supplies run out, but whatever may happen in this direction, it is certain that the criticisms leveled at five or six of the new promotions will not be forgotten by investors or even speculators if there should be a revival of rubber promotions. The general position is that whatever dividends may have been paid or are assured the market value of the shares in all the companies has fallen considerably, and this is a position of affairs that the average investor does not appreciate, and he is not always too ready to agree with the opinion of the chairman of his company that the fall in price of

rubber is a very great advantage. With regard to this point, it is pretty generally agreed in manufacturing circles that a further drop of a shilling or two per pound will see a large increase in the demand. I have my doubts as to the vast extent of the predicted increased demand, but quite agree that the demand will be largely augmented by the advent of an era of low prices. At the time of writing, when firm, hard Pará has fallen below 6 shillings a pound, quite a panic seems to have possessed shareholders in rubber, and the disposition to realize holdings for what they will fetch has, of course, had the effect of further depreciating share values.

At this season of the year it has generally been my custom to say something about rubber or rubber factories arising from a

HOLIDAY NOTES.

Continental holiday. This year, however, I have nothing of technical interest to record. My vacation was briefer than usual, and time only permitted of my visiting a few places in France. I may say that when in Paris I had the pleasure of meeting Mons. A. D. Cillard, fils, editor and proprietor of our contemporary *Le Caoutchouc et la Gutta-Percha*, and was hospitably entertained by him. My knowledge of French by no means represents perfection, but I think it will be admitted that it is better than Mons. Cillard's English, so the conversation during dinner on the boulevards was carried on in French. I understand that Mons. Cillard is secretary of the official French delegation to next year's Rubber Exhibition in London, and expects to be in London about a fortnight. Though of course France is an important rubber manufacturing country, she still remains by far our best customer. The most recent figures are exports to France, £379,530, and imports from France, £30,000. The larger exports to France are confined to certain branches upon which the new French tariff is unlikely to have much effect.

SINCE writing my last notes on this absorbing topic the gauntlet has been thrown down by the Simplex Rubber Co., owners of Gare's patent, to all and sundry other reformers. I was fully expecting something of the sort, and am not taken by surprise. Under the circumstances, I must necessarily refrain from comment until the issue between the Simplex company and the Premier company is settled, either within or without the law courts. I say Premier company, as I understand that they are one of the disputants in the action which is impending. As there are several reforming patents granted, the issue of their action will be looked for with great interest, and the trial will certainly rank as the most important rubber case which has come before the courts for a very long time.

REFORMED RUBBER.

I AM looking out with interest for replies to the letter on this subject from "A Merchant" in the September issue of THE INDIA RUBBER WORLD. The wording of the letter is of a somewhat peremptory nature, and at the same time slightly obscure. The gist of it is that our esteemed editor is requested to ask the rubber manufacturers to inform the trade (?) what is the difference in the working qualities of fossil flour as sold under various names, such as kieselguhr, infusorial earth, tripolite, and so on. The American manufacturers may possibly jump at this opportunity of getting into print, but I doubt if much information will come from this side. Though always ready to assimilate trade information, the British manufacturer rarely has any to impart. "A Merchant" wants to know why one of these bodies is sold to the disadvantage of the other, when in reality they are of one and the same character. I should think that the correct answer to this is that one selling agent can "get in" where

FOSSIL FLOUR.

another fails to effect an entrance. I am not prepared to admit that all the various fossil flours on the market are of identical composition, or will all give the same result in compounding. There are differences in gravity, in color and in texture, and perhaps other little differences the importance of which is known to the astute rubber manufacturer. It is not enough for the latter to be told that other fossil flours are of the same character; he is not going to risk a change merely on the strength of a general statement of this sort. I do not know what the business done in the States in this particular chemical amounts to. In England the amount used in the rubber factories is by no means large, and there are at least three firms supplying this modest demand with fossil flour, sold under three quite different names, which give no direct clue to the composition of the material. For purposes other than rubber manufacturing the use of fossil flour—otherwise finely divided silica—has largely increased of late years. In addition to the older districts of Germany and Nova Scotia it is now obtained from Sweden and Ireland. The rigors of the climate are against the Swedish output, but great progress has been made in the north of Ireland, where an important deposit of high grade material is being worked by the Diatomite Co. Limited, of Manchester.

THE new scale of duties on pleasure cars which have just come into force are calculated to discourage the purchase of 40 H. P.

TIRE NOTES.

cars, and a slump in the manufacture of very powerful cars has already set in. Although the increased cost of tires during this year may not have caused the giving up of motoring, in many cases there is no doubt that it has led to a considerable diminution in mileage. "We must save the tires," the motorists have been saying, and many trips have been abandoned. A friend of mine, who lives nine miles from his place of business, says that he has used the train much more frequently this year compared with recent years, in order to save his motor tires, which cost £60 [= \$292] for the 20 H. P. car. Of course, this sort of economy has not been universal, but from all accounts it has been fairly general. Petrol is also up in price, now being 1s. 3d [= 30.4 cents] per gallon.

Large additions are now being made to the works of the Shrewsbury-Challiner Tyre Co., Limited, at Ardwick Green, Manchester. These will have the effect of about doubling the capacity of the works, and will include new and more extensive offices.

I MUCH regret to record the death of Mr. Thomas Rowley, of Manchester, which occurred on August 11 at his residence at

OBITUARY.

Colwyn Bay, North Wales. Mr. Rowley had been in a poor state of health for some years, and the business of Messrs. Thomas Rowley & Co. has been for some time managed entirely by Mr. James Wallwork, who will continue to carry it on. Like many other men who later became prominent in the trade, Mr. Rowley was with Messrs. Charles Macintosh & Co., Limited, in early life, gravitating thence to the works of Mr. Clarke, at Newton Heath, Manchester, and later to Messrs. Quinn & Co., of Leyland, the modest works which later on gave rise to the present large establishment of the Leyland and Birmingham Rubber Co., Limited. At a later date he carried on business for himself as a proofer at the Victoria Works, Newton Heath, now Messrs. Frankenstein & Sons. During the last period of his life his attention had been mainly concentrated on scrap rubber, reclaimed rubber and a number of chemicals for use in the rubber industry.

The decease on October 1 of Mr. Thomas Arthur Hampson, managing director of the Castle Rubber Co., Limited, at Warrington will be much regretted by his numerous friends. Not originally connected with the trade, Mr. Hampson came into it by stress of circumstances, and soon made his mark, though also retaining his directorships of a number of other industrial concerns.

INSULATED WIRES FOR MOTOR CARS.

BY JONATHAN MILBORNE.

NOTWITHSTANDING the higher price often paid by motorists for their insulated wire than is paid for similar material for other purposes, the quality is, as a rule, far lower than ought to be put in so important a part of the car's anatomy. I have just paid the current price for some low tension wire, only to find that the whole of the insulation could be easily chipped off with the thumb nail. It is usual to find the lowest class of rubber used for insulation, if rubber is used at all, although this material should be almost of the very best.

In one respect the quality of rubber used for tobacco pouches would be ideal, and this is in point of elasticity, but unfortunately this very highest grade suffers from the disadvantage that in cold weather it hardens, and is liable to crack. A very slightly lower quality is more suitable for all-round good results, and certain grades of the red variety frequently used by analysts in the form of tubing are perhaps the best of all; not forgetting, however, that there is plenty of veritable red rubber rubbish.

An excellent plan is to buy any ordinary low tension wire that contains plenty of good wire at the core, then to protect it by pushing it into some good rubber tubing, obtained from the firms who deal in chemical laboratory apparatus. Of course the diameter is chosen so as to be suitable for the low tension wire, and if the fit is somewhat loose it does not matter. In this way you can crowd the outer tubing on to the wire so that when the terminal has been attached, the rubber tube will spring itself well over the terminal joint and give a most effectual and neat protection.

The "insulation resistance" of the rubber tube referred to is such that, although the completed cable may not be quite as thick as ordinary high tension cable, it will answer the purpose just as well and probably better. Such cable is particularly applicable to the high tension wires or high tension distributor devices in which the rigidity of the ordinary cable is a disadvantage and often a nuisance. For as a low tension wire it is obviously much better than the ordinary stock article in point of resistance to wear, water, and escape of electrical current.

For the very best quality of flexible cable, merely stranded wires are now but seldom used, but the makers of motor accessories do not yet seem to have thought it worth while to follow suit. The method of construction is perhaps expensive, but it is certainly efficient. Each wire is flattened out into ribbon and is twisted round a cotton thread, a large number of such wires being run together in each cable. The terminals, of course, cannot very well be soldered, but are held with a neat screw fitting.

Now just a few words on the subject of terminals. These are generally flimsy affairs which might be of some use if the copper were rather thicker. These neat little ring devices are handy, but the wire sooner or later breaks off close to the ring. That is the weak point with every terminal. There is only one way of making a satisfactory finish of the joint between the wire and the terminal, and that is to cover the whole joint and some of the wire with insulating tape, and this must be very carefully and neatly done; of course the ring type terminal cannot be treated thus.—*Motor Print.*

"ROBERT DAWSON EVANS, 1843-1909," is the lettering on the outside of a sumptuous little volume, privately printed, as a tribute to the man here named. There is a brief biographical sketch, including a record of Mr. Evans's successes in the rubber and other businesses, and an appreciation of his character which his many surviving friends will ratify. The frontispiece is an unusually good photograph.

A BOOK for everybody interested in tires—"Rubber Tires and All About Them"—this office.



"THE INDIA RUBBER WORLD" CASTILLOA TROPHY.

[To be offered at the London Rubber Exhibition, 1911. Made by Dieges & Clust, New York.]

OUR "CASTILLOA" TROPHY.

THE INDIA RUBBER WORLD trophy, offered to stimulate an interest in improved methods dealing with the latex of the *Castilloa* rubber, and to be awarded at the International Rubber Exhibition in London next year, is a silver cup of artistic design and workmanship, 50 inches in height. The stem of the cup, of which an illustration appears on the opposite page, represents a trunk of the *Castilloa elastica* tree, beside which stands a rubber tapper, *machete* in one hand and a *calabash* in the other, tapping the tree in the destructive manner common to wild-rubber gatherers. The upper part of the tree trunk terminates in a cluster of *Castilloa* leaves, which hold a vase, graceful in form, the center panel bearing the inscription "THE INDIA RUBBER WORLD Trophy for the Best System of Extracting Latex from the *Castilloa elastica*. International Rubber Exhibition, London, 1911." The middle of the border at the top shows a raised hemisphere of the countries in which the *Castilloa* thrives.

On each side is a frieze of planted *Castilloa*. The trophy, in American butler and French gray style, represents a value of \$1,000. The well-known silversmiths, Dieges & Clust (New York), are the makers.

CONDITIONS.

1. The cup will be awarded for the best process, method, tool or appliance for extracting the maximum amount of latex from the *Castilloa elastica*.
 2. Entries may be tools or appliances, accompanied by full description or drawings, accompanied by descriptions.
 3. There will be no entrance fee.
 4. Tools, appliances, or drawings submitted for competition will be assembled as one exhibit, known as "THE INDIA RUBBER WORLD Competition."
 5. The cup will be the absolute property of the successful contestant. It will be presented to the winner or his accredited representative at the International Rubber Exhibition Dinner, to be held in London while the Exhibition is in progress.
 6. The judges have the right to test every tool or appliance.
 7. Tools, appliances, and drawings will be returned to the owners or representatives at the close of the Exhibition.
 8. While the management of the Exhibition will scrupulously protect the exhibits, they will not be responsible for loss or damage from any cause.
 9. The judges' decision shall be final, and entries will be accepted only on this understanding.
 10. All entries must be made to the Award Committee, International Rubber and Allied Trades Exhibition, Limited, 75, Chancery lane, W. C., London, by Monday night, May 1, 1911. Letters bearing the postmark May 1 will be accepted as entered at the offices on that date. Entries should be sent by registered post, or delivered by hand, that a receipt may be given for them. Exhibits for competition must be sent direct to the Award Committee, Royal Agricultural Hall, Islington, N., London, but should not reach that building before June 15 and not later than June 20. Transportation must be paid on all exhibits.
- The Exhibition opens June 24 and closes July 11.

LARGER KASAI RUBBER PROFITS.

THE trading profits for 1909 of the Compagnie du Kasai—the rubber monopoly in the Kasai region of the Belgian Congo, —though showing an important improvement over 1908, fell considerably short of the results for some preceding years. The gross return for 1909 was 13,055,293 francs [= \$2,519,671.55]. The net profit, after providing for the cost of planting rubber as required by law, interest on bonds, etc., was 6,324,927 francs [= \$1,220,710.91].

After paying 6 per cent. on the capital shares, directors' fees, agents' commissions, and adding to the reserves, there remained for the holders of the beneficiary shares (common stock) 5,226,000 francs [= \$1,008,618], or 1,300 francs per share, against 800 francs in the preceding year.

The capital of the company is in 4,020 shares of 250 francs each, totaling 1,005,000 francs [= \$193,965], and an equal number of beneficiary shares "without designation of value." It is the latter which participate in the large profits above referred to. One-half of the beneficiary shares are held by the 14 companies

participating in the Kasai syndicate, one-half by the State. [See THE INDIA RUBBER WORLD, November 1, 1907—page 54.] If the beneficiary shares be given the same par value as the capital stock (250 francs), as is the custom in issuing "common stock" in America, the Kasai dividend of 1,300 francs per share would work out at 520 per cent. for the year.

A recent Brussels bourse quotation for these shares "without designation of value" was 14,575 francs [= \$2,812.98]. The quotation a year before was 13,675 francs.

The net profits of the Kasai syndicate since the beginning, derived chiefly from its rubber trading—they also have ivory concessions, but this branch of the business is not important—have been:

In 1902	1,210,706.23 francs	[= \$233,666.26]
In 1903	3,497,393.01 francs	[= 677,000.85]
In 1904	5,334,797.06 francs	[= 1,029,615.82]
In 1905	7,543,084.98 francs	[= 1,455,885.40]
In 1906	8,033,657.22 francs	[= 1,550,495.85]
In 1907	2,018,979.93 francs	[= 389,663.13]
In 1908	4,337,428.70 francs	[= 837,123.74]
In 1909	6,324,927.00 francs	[= 1,220,710.91]

The details for the calendar year 1909, presented here, were reported at the general meeting of the company held in Brussels on October 4.

NEW YORK ELECTRICAL SHOW.

THE fourth annual New York Electrical Show, held in Madison Square Garden, October 10-20, was even more successful than its three predecessors, the exhibits being more numerous and more varied, and the attendance larger. The spectacular feature was the magnificent electrical illumination of the vast building, at once illustrating utility, taste, and skill. There were many other elements of the exhibition representative of electrical engineering progress, together with an extensive display of electrical vehicles, and particularly of household equipment, in the way of heating, cooking, and laundry apparatus, and so on. The latter class of articles is becoming important in the trade, and figures largely in the manufacture of electrical devices. It may be added that every one of them calls for the use of rubber for insulation.

The idea of electrical shows is becoming very popular as a means of educating the public in new uses of electricity, and giving manufacturers an opportunity to display their products. The first annual electrical show of the Colorado Electric Club was opened at Denver on October 10, and continued during the week.

CABLES AT THE ELECTRICAL SHOW.

THE Safety Insulated Wire and Cable Co. (New York) exhibited at the recent New York Electrical Show, in Madison Square Garden, a service box about 3 x 4 feet and 4 feet high, built of brick, showing a 16 duct run such as is installed by the company's underground construction department connected to the box. The idea was to illustrate the method of underground electrical connections. The exhibit included also boards with samples of submarine, underground, and other cables insulated with india-rubber, paper, and so on.

MADEIRA-MAMORÉ RAILWAY.

THE Madeira-Mamoré Railway Co., whose work in opening an outlet for the important rubber fields of Bolivia have been reported on in recent issues of THE INDIA RUBBER WORLD, have marketed recently in Europe a bond issue of £450,000 at 6 per cent., at 60 years.

THE Beacon Falls Rubber Shoe Company (Beacon Falls, Connecticut) have issued their list of "Marathon" tennis shoes and regular lines of yachting shoes and basket ball shoes. The yachting shoe prices are the same as those given for other companies in the last INDIA RUBBER WORLD (page 32).

A BRAZILIAN VIEW OF THE RUBBER CRAZE.

[FROM "REVISTA DA ASSOCIACAO COMMERCIAL DO AMAZONAS."]

THE INDIA RUBBER WORLD reproduces in its April number a curious picture showing the London Stock Exchange on one of the days of the greatest excitement over the organization of enterprises for *Hevea* rubber. The most curious feature of the illustration is not the varying phases of physiognomic expression of the great number of people crowding around, awaiting their turn to risk their toil-won savings in this or that company loudly vaunted by the brokers.

What strikes the attention, rather, is that notwithstanding the valley of the Amazon is the largest producer of rubber, representing more than one-half of the world's consumption, it is not on account of this rubber, the best and most abundant, the veritable dominating factor in markets and quotations, that this fever, this rage to become a stockholder, to invest money with a prospect of realizing enormous dividends within a short time, that this mad crushing and forging ahead by dint of fisticuffs is to be attributed.

These pounds sterling are pouring out for *Hevea* companies—yes, for our *Hevea*, but planted and exploited in the Orient. If some one were to venture to launch, we will not say ten, twenty, but barely two or three companies for exploiting rubber plantations in Amazonian regions, he would look in vain for purchasers of the stock.

To our mind this reveals one of the most interesting phenomena of our extractive industry. It is certain that we have the greatest *seringaes* (rubber estates) in the world, all of the territory of the nation and that of other countries washed by the waters of the Amazon river exerting a predominant influence in the markets, that is to say, as a source of supply. The fine quality of our *Hevea* is acknowledged by every one and even admitted to be without an equal, and unapproachable in its manufacturing adaptability.

Even the Federal government recognizes that the greatest advantages accruing to the nation's treasury during the last fiscal year were derived by the rubber industry. At any rate, this is what the minister of finance has recently declared in his reports to the President of the republic, and this latter in his annual message to the Congress.

Our February congress—but recently adjourned—also had the good fortune to arouse the interest of the minister of agriculture in its final conclusions. [See THE INDIA RUBBER WORLD, April 1, 1910—page 233.] This official, who is a large agriculturist in São Paulo, and one of the best exponents of our resources, declared in a telegram to the governor of the state that he was in most perfect sympathy with the conclusions reached and with the earnest and patriotic work of the congress.

Some of the measures recommended he had already put into practice, such as the government subvention of the Cerqueira Pinto invention, the use of which on a large scale in the Acre territory would furnish sufficient data for more determinate and general measures.

There are other things, however, for which a solution is not less desirable than the results achieved by Mr. Cerqueira Pinto's invention. Our economic and industrial life in the Amazonian region must be readjusted. Let us throw off this prolonged lethargy that has hampered our activities for the past 30 years; above all, we must recognize the fact that fortune tires at last of supporting the spendthrift, finally frowning severely upon those too unwise to profit from her favors.

Twenty years ago, when the most far-sighted among us pointed out the danger of our supremacy involved in the planting of our *Hevea* in the Orient, the burden of the reply made in a unanimous chorus was that our forests were limitless, and that there was no end to our inexhaustible riches in gums. And, indeed, up until the present time there has been no falling off in this

respect. But who can say with certainty what the extent of our native resources is at the present time? It is a fact that some regions are only now beginning to be explored. From the shores of the principal rivers the tide tends toward the middle districts, thence to the more inaccessible regions in the interior, but the way in which this was done and the expense and difficulties encountered—this is something that has never yet been properly appreciated and calculated.

We heard, too, a little while ago, Lieutenant-Colonel Rondon delight his audience at his lecture in the hall of our directors' hall with a magnificent description of those rubber plantations which, right after leaving the shores of the Paraguay, seemed to follow the explorers, describing curves and zig zag lines as far as the regions of the Madeira and the headwaters of its most important effluents.

The fact of the matter is that we must not fold our arms or indulge in any idle dreams on account of the quotations recently reached by rubber. Even admitting that the feverish excitement alluded to above may result for the purchasers of stock in the companies thickly crowding one another on the London Exchange, in a great disillusionment or tremendous loss, the sums that shall be applied to greater production and that will, for the most part, realize compensating returns, are bound to result to our decided disadvantage through the Asiatic planting in the future and the gradual increase of its influence in a not distant future on our markets of consumption.

NEW TRADE PUBLICATIONS.

THE FAULTLESS RUBBER CO.—Ashland Rubber Works (Ashland, Ohio) issue a catalogue of Hospital and Surgical Rubber Goods, embracing some of their high-class specialties for use in hospitals and sanitariums, which is attractively got up and especially in connection with the illustrations. [6" x 9". 20 pages.]

THE FIRESTONE TIRE AND RUBBER CO. (Akron, Ohio) issue a booklet on Carriage Tires, having reference to solids. The book is printed in two colors, giving better effect to the cuts than if they were only in black and white. [4¾" x 7¼". 12 pages.]

B. F. STURTEVANT CO. (Hyde Park, Massachusetts) issue a handsome brochure, "Standard Types of the United States Navy," illustrated with a number of American warships, in connection with each of which are details of the Sturtevant fire room blowers and Sturtevant ventilating fans with which they are equipped. It may be suggested that if devices of their manufacture are good enough for warships, they may be found serviceable in the power houses and other departments of rubber factories. [10½" x 8". 24 pages.]

CENTRAL ELECTRIC CO. (Chicago) issue, under date of October 1, 1910, a new Price List and Discount Sheet applying to their Catalogue No. 26, of electrical apparatus and insulating materials. [6" x 8¾". 76 pages.]

ALSO RECEIVED.

The Webb Motor Fire Apparatus Co., St. Louis.—The Motor in the Fire Department. 52 pages.

Oswego Machine Works—Neil Gray, Jr., Proprietor, Oswego, New York. Cutting Machines Exclusively. 79 pages.

Katzenbach & Bullock Co., Inc., New York and Trenton—Chemicals [for the rubber manufacturer]. 12 pages.

Home Rubber Co., Trenton, New Jersey.—[N B O Packing.] 8 pages. [O I M Packing.] 4 pages.

The Diamond Rubber Co., Akron, Ohio.—Little Voyages of Discovery. [Relates to the qualities of "Diamond" tires.] 16 pages.

THE National Board of Fire Underwriters have issued a new edition of their rules and requirements, applicable to different interests. One pamphlet contains rules regarding Sprinkler Equipments; another refers to Valves, Indicator Posts and Hydrants for Mill Yard Use; and so on. These will doubtless prove of interest in many rubber factories, as well as to industrial establishments generally.

A BOOK for rubber planters—Mr. Pearson's "What I Saw in the Tropics."

Recent Patents Relating to Rubber.

UNITED STATES OF AMERICA.

ISSUED SEPTEMBER 6, 1910.

- N**O. 969,160. Hose coupling. J. H. Hardy, Ipswich, Mass.
 969,216. Hose coupling. J. H. Stephens, Vernon, Tex.
 969,241. Vehicle wheel. [With tire of solid rubber tread blocks.] T. W. Baker, London, England.
 969,389. Auto tire. F. Modlin, Sioux City, Iowa.
 969,416. Adjustable rim and tire. H. C. Smith, Ainsworth, Neb.
 969,425. Anti skidding device for wheel tires. [Metal tread plates.] F. C. Traver, Far Rockaway, N. Y., assignor to Pearsall-Traver Mfg. Co.
 969,426. Anti skidding device coupling. *Same*.
 969,439. Pocket pneumatic cushion. [for a seat, swimming pad, etc.] C. B. Archer, Milford, Mass.
 969,464. Apparatus for forming hot water bags and other hollow rubber articles. G. D. Farnam, assignor to Star Rubber Co.—all of Akron, Ohio.
 969,536. Vehicle wheel. [With solid rubber tire.] J. Illingworth, Newark, N. J.
 969,657. Spray nozzle. J. Reade, Huntington, N. Y.
 969,717. Tire. [Pneumatic.] L. M. Nelson, Pennington, N. J., assignor to Nelson Tire Co.
 969,721. Detachable automobile tire tread. H. M. Pitman, assignor of two-thirds to I. Vaughan—both of Oakland, Cal.
 969,722. Detachable automobile tire tread. H. M. Pitman, Oakland, Cal.
 969,744. Anti skidding protector. G. W. Bierer, Pittsburgh, Pa.

Designs.

- 40,863. Rubber binding for matting ends or similar articles. C. H. Oakley, Trenton, N. J.

ISSUED SEPTEMBER 13, 1910.

- 969,779. Vehicle wheel rim. J. R. Gammeter, assignor to the United Rim Co.—all of Akron.
 969,886. Wheel. [Circumferential socket for holding in place a segmental rubber tire.] J. C. Lighthouse, Rochester, N. Y.
 969,887. Wheel. *Same*.
 969,888. Wheel and tire. *Same*.
 969,889. Sectional wheel tire. *Same*.
 969,890. Wheel tire. *Same*.

[The five patents last named have reference to one system of tires and tire attachments.]

- 969,908. Pneumatic tire protector. E. Russell, Kansas City, Kans.
 969,919. Hose and pipe mender. F. J. Stulp, Muskegon, Mich.
 970,005. Demountable tire. V. Wildner, Chicago.
 970,126. Vehicle wheel. H. Scullin, St. Louis.
 970,164. Hose support. J. E. Austin, Fresno, Cal

Trade Mark.

- 52,028. Roberts, Johnson & Rand Shoe Co., St. Louis. The fanciful picture of a boy and girl, with the words *Tess* and *Ted*. For leather and rubber shoes.

ISSUED SEPTEMBER 20, 1910.

- 970,535. Vehicle tire. [Solid rubber, with special rim.] W. D. McNaul, Toledo, Ohio.
 970,734. Treatment of leather with india-rubber. A. McLennan, London, England.
 970,767. Water bottle. A. L. Swingle, Putney, S. D.
 970,907. Hot water bandage. [A fluid containing bandage comprising a flexible hollow cylindrical member and constituting a reservoir which may be wrapped conveniently around different portions of the body—the foot, for instance.] J. E. Forbes, Kopple, and B. A. Barr, McKees Rocks, Pa.

Trade Mark.

- 51,215. ▲ G. Spalding & Bros., New York City. The words *Baby Dimple*. For golf balls.

ISSUED SEPTEMBER 27, 1910.

- 971,021. Knife or tool for tapping rubber and other gum trees. R. W. Cater, West Croydon, and G. V. A. Schofield, London, England.
 971,100. Cushioned vehicle wheel. M. H. Aldridge, Plattsburg, N. Y.
 971,246. Protector for pneumatic tires. O. A. Britson, Brookings, S. D. [Described in THE INDIA RUBBER WORLD, October 1, 1910—page 33.]
 971,301. Tire casing. J. W. Moore, Huntsville, Ala.
 971,318. Vehicle wheel rim. E. C. Shaw, assignor to the United Rim Co.—all of Akron, Ohio.
 971,384. Wheel for vehicles. C. Kindscherf, assignor to the Continental Caoutchouc und Gutta-Percha Co.—all of Hanover, Germany.
 971,415. Buffer and other spring constructed with india-rubber. A. G. Spencer, London, England.

Trade Mark.

- 51,625. Ford Mfg. Co., Chicago. The word *Aquaproof*. For prepared rubber roofings.

[NOTE.—Printed copies of specifications of United States patents may be obtained from THE INDIA RUBBER WORLD office at 10 cents each, postpaid]

GREAT BRITAIN AND IRELAND.

PATENT SPECIFICATIONS PUBLISHED.

The number given is that assigned to the Patent at the filing of the application, which in the case of these listed below was in 1909.

*Denotes Patents for American Inventions.

[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, SEPTEMBER, 7, 1910.]

- 11,080 (1909). Spring wheel having a compressed air cushion and solid rubber tread. J. Spyker, Amsterdam, Holland.
 11,135 (1909). Electric cable insulated by a layer of vulcanized bitumen between two layers of vulcanized rubber, and provided with a layer of rubber coated tape and an outer braiding. British Insulated and Helsby Cables, Ltd., Helsby, and two others.
 *11,137 (1909). Waterproof cover for ladies' hats. E. A. Kendall, New York City.
 *11,175 (1909). Hose having a layer of asbestos fabric, which may or may not have strengthening wires, between layers of rubber. R. J. Evans, Franklin, Pennsylvania.
 11,176 (1909). Wheel with two rims side by side. H. R. Krastel, Frankfurt o/M., Germany.
 11,178 (1909). Pneumatic tire with means of preventing the dislodgement of security bolts. F. P. Edwards, Salisbury.
 11,180 (1909). Wheel with two or more rims side by side. O. Lefevre, Neuilly-sur-Seine, France.
 11,311 (1909). Pneumatic tire with steel non skid plates. S. B. Seropian, Nenagh, Tipperary.
 11,340 (1909). Waterproof composition. A. M. Hart, London.
 11,382 (1909). Solid or cushion tire. L. Liais, Paris, France.
 11,383 (1909). Solid or cushion tire. L. Liais, Paris, France.
 11,532 (1909). Boot heel. J. G. and V. Tomkins, Elsternwick, Australia.
 11,557 (1909). Spring wheel in which resiliency may or may not be increased by the use of rubber. E. Rimailho, Neuilly-sur-Seine, France.
 11,560 (1909). Cushion tire with thick rubber tread. L. E. Cowey, London.
 11,592 (1909). Sole and heel protector. A. E. Walkden, Liscard, Cheshire.
 [ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, SEPTEMBER, 14, 1910.]
 11,752 (1909). Tire having a clincher cover filled with an elastic spongy material. R. J. Caldwell, New Southgate, and Pneumatic Syndicate, London.
 11,786 (1909). Tire having an ordinary outer cover enclosing radial rubber pillar supports surrounded by helical springs. W. Stansfield, Stockport.
 11,965 (1909). Composition for self sealing pneumatic tires consisting of treacle, pumice stone, and plaster of Paris. J. Jeffrey, Handsworth, Staffordshire.
 11,969 (1909). Pneumatic tire with cork filling between the air tube and cover. J. C. Barker, Leeds.
 12,031 (1909). Mechanism for use in the making of pneumatic tires. T. Sloper, Devizes, Wiltshire.
 12,041 (1909). Puncture closer for tires. R. Sampson, Montreal, Canada.
 12,193 (1909). Spring wheel with rubber tread. H. Fokker, Haarlem, Holland.
 *12,250 (1909). Apparatus for devulcanizing india-rubber. M. C. Clark, Providence, Rhode Island.

[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, SEPTEMBER 21, 1910.]

- 12,303 (1909). Football boot. A. Tyree & Co., Christchurch, New Zealand.
 12,386 (1909). Pneumatic tire with metal tread. J. F. F. W. Ure, Chelsea, London.
 12,424 (1909). Ebonite capable of resisting the action of chlorine and alkalis. M. Wildermann, Ealing, London.
 12,524 (1909). Cap for motorists. B. Phillips, Grimsby.
 12,596 (1909). Non skidding protector for pneumatic tires, consisting of a solid rubber band furnished with an inextensible wire placed in a circumferential groove in the cover. M. F. Blake, London.
 12,610 (1909). Puncture proof band for tires. W. F. Macmullen and H. J. Parfitt, Torquay, Devonshire.
 12,687 (1909). Compound for coating fabrics. G. H. Winterbottom, Manchester, and another.
 *12,902 (1909). Spring wheel with rubber tread. W. G. Marr, East-hampton, Mass.
 *12,903 (1909). Special tread for pneumatic tires. H. B. Parham, New York City.
 *12,904 (1909). Non slipping sole for boots. J. G. Doughty and J. R. Sanford, Winsted, Conn.

[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, SEPTEMBER 28, 1910.]

- 12,926 (1909). Tires formed with oblique grooves on the treads, to prevent skidding. H. D. Strachan and W. Strachan, Edinburgh.
 *12,973 (1909). Device for marking golf balls. W. T. West, Camden, N. J.
 *12,975 (1909). Tire inflating pump. E. J. Rohrbacher, Blaine, Wash.
 12,977 (1909). Spring wheel with solid rubber tire. E. C. R. Marks, London. (M. A. Hodgson, Toronto, Canada.)
 *13,088 (1909). Non skid tread device of chains for pneumatic tires. T. H. Curtis, Louisville, Kentucky.
 13,195 (1909). Construction of rubber overshoes. A. S. Douglas, Edinburgh.

- 13,271 (1909). Protective cover for pneumatic tires. A. Constantin, Hanover, Germany.
 13,272 (1909). Spring wheel with rubber tread. G. Deduis, Paris, Francis.
 13,273 (1909). Cover for pneumatic tire. J. Fulton, Parsley.
 13,300 (1909). Poles, crutches, chair legs, and the like. G. H. Hickson, Stockton-on-Tees.
 13,375 (1909). Elastic stud tire. J. Cairns, Willenhall, Staffordshire.

THE FRENCH REPUBLIC.

PATENTS ISSUED (with Dates of Application).

- 413,718 (Feb. 19, 1909). J. Knight. Demountable tire.
 413,890 (March 21). Boutiny and Laporte. Collar for tire repairs.
 413,891 (March 21). C. Dreyfus, A. Lucil, and The Clayton Aniline Co., Ltd. Process for purifying rubber.
 414,155 (June 11, 1909). Michelin et Cie. Process for rendering balloon tissues impermeable.
 414,113 (March 22, 1910). D. Lance. Tire inner tube.
 414,166 (March 26). Cartaret. Tire and rim for vehicle wheels.
 414,031 (March 25). M. Francand. Heel pad.
 414,120 (March 25). W. L. Dinnsmoor. Vulcanizer.
 414,280 (March 2). J. L. Jackson. Demountable rim for pneumatic tires.
 414,394 (June 15, 1909). H. F. Morel. Process for rendering balloon fabrics impermeable.
 414,327 (March 24, 1910). J. Richardson. Tire protector.
 414,440 (April 4). The Nelson Tire Co. Elastic tire.
 414,544 (April 7). T. C. Mussen and J. H. Waldman. Elastic tire.
 414,760 (April 12). C. H. Scott. Manufacture of linoleum.
 414,761 (April 12). C. H. Scott. Apparatus for the manufacture of linoleum.
 414,762 (April 12). C. H. Scott. Devices for printing designs on linoleum.
 414,844 (April 15). The Sheated Tube Co., Ltd. Pneumatic tire.
 414,759 (April 12). L. C. A. de Cleriez. Rubber recleaning process.

[NOTE.—Printed copies of specifications of French patents can be obtained from R. Robet, Ingenieur-Conseil, 16 avenue de Villier, Paris, at 50 cents each, postpaid.

THE RUBBER TRADE IN CANADA.

CANADIAN imports of manufactures of india-rubber and gutta-percha for the fiscal year ended March 31, 1910, by countries, are officially stated to have been in value as follows:

	United States.	Great Britain.	Other Countries.	Total Value.	Duties Collected.
Boots and shoes..	\$112,583	\$1,887	\$....	\$114,470	\$28,801
Belting	51,141	13,517	163	64,821	16,827
Clothing and water-proof cloth	45,871	210,724	410	257,005	64,234
Hose	91,983	1,397	4	93,384	31,691
Packing and mats.	68,882	5,613	348	74,843	25,712
Vehicle tires	158,023	32,517	3,759	194,299	65,107
All other	478,869	113,009	49,634	641,512	166,493
Total, 1909-10...	\$1,007,352	\$378,664	\$54,318	\$1,440,334	\$398,865
Total, 1908-09...	682,919	183,019	35,637	901,575	253,279
Total, 1907-08...	666,307	182,360	49,457	898,124	247,898
a Total, 1906-07...	476,444	68,957	30,490	575,891	158,244
b Total, 1905-06...	680,014	99,695	32,034	811,743	100,879

a For nine months ended March 31, 1907.

b For fiscal year ended June 30, 1906.

Imports from Germany amounted in value to \$40,693, against \$22,209 in the preceding year, and \$27,815 in the twelvemonth ending March 31, 1908. The imports from all other countries than the United States, Great Britain, and Germany amounted only to \$13,625.

There may also be noted the following imports, not classified by the customs as "rubber goods," but having a relation to the industry:

	United States.	Great Britain.	Other Countries.	Total Value.	Duties Collected.
Webbing, elastic and non-elastic.	\$234,228	\$56,444	\$11,503	\$302,175	\$56,380
Stockinettes for rubber footwear	62,439	14,440	.....	76,879	10,837
Duck for rubber belting and hose	67,536	10,290	.....	77,826	free
Rubber thread ...	4,836	.....	.....	4,836	free

EXPORTS OF CANADIAN RUBBER GOODS.

Belting	\$28,386	Clothing	\$5,732
Hose	5,021	All other	56,398
Footwear	129,618		
Mats and matting....	317	Total	\$225,472

Distribution of Rubber Goods Exports.

To—	Value.	To—	Value.
Great Britain	\$34,283	Argentina	\$102
Australia	36,824	Brazil	88
New Zealand	32,154	France	1,651
Newfoundland	30,629	Belgium	7,498
British Guiana	604	Denmark	856
British West Indies..	25	Italy	23
Other British Possessions	9	Norway	95
United States	59,104	Japan	1,523
Mexico	19,994	Total	\$225,472

Comparison with Former Exports.

Year ended March 31, 1909.....	\$236,083
Year ended March 31, 1908.....	239,983
Nine months ended March 31, 1907.....	169,294
Year ended June 30, 1906.....	266,504
Year ended June 30, 1905.....	170,359

IMPORTS OF RAW MATERIALS.

	Pounds.	Value.
India-rubber and gutta-percha.....	3,099,409	\$3,555,507
Rubber recovered; rubber substitute; hard rubber in sheets.....	4,189,424	698,424
Rubber, powdered, and rubber waste....	2,669,541	257,944
Total, 1909-10	9,958,374	\$4,511,875
Total, 1908-09	6,124,882	2,483,570

CANADIAN IMPORTS OF RUBBER TIRES.

Imports of the rubber tires (for vehicles of all kinds) are reported by the customs service in Canada in more detail than in other countries. The following official statements of value are for fiscal years ended March 31:

	1907-08.	1908-09.	1909-10.
Great Britain	\$10,326	\$10,732	\$32,517
France	931	1,484	2,730
Germany	1,287	504	1,029
United States	81,555	96,795	158,023
Total	\$94,099	\$109,575	\$194,299

Imports of automobiles and other motor vehicles during the past fiscal year amounted to 1,437, valued at \$1,816,164, of which the United States contributed 1,345 machines and Great Britain 78. The value of such imports for the preceding year was \$585,097. Imports for the three months, April-June, 1910, amounted to \$1,379,387.

THE PAN AMERICAN UNION.

THE name "The Pan American Union" has been adopted for what has been known hitherto as "The International Bureau of the American Republics," the headquarters of which are in Washington. This is in accordance with a resolution adopted at the fourth International Conference of American Republics, held recently at Buenos Aires. This was the most important of the conferences held in the series, and its results doubtless will be seen in a better understanding between the people of the several republics and closer commercial relations between North and South America. A very full summary of the proceedings at Buenos Aires appears in the valuable *Bulletin* of the Pan American Union, published at Washington, in its issue for October, 1910.

THE second annual report of the Pope Manufacturing Company (Hartford, Connecticut) for the year ending July 31, 1910—the first complete fiscal year of the company, as reorganized—shows sales for the year of \$4,010,199.94, an increase of \$1,166,458.53 over the sales of the preceding twelve months, and net earnings of \$745,390.87. Dividends paid during the year amounted to \$368,054, and the surplus at the end of the year was \$860,203.63.

The Rubber Trade in San Francisco.

By a Resident Correspondent.

THERE are some jobbers who see no difference in trade conditions this month from what has prevailed during the past six months; others, however, say that there is a little improvement over last month, and that orders for next season are coming along very favorably; others still are certain that business is as dull as it possibly could be, and insist that it is worse now than at this time last year; again others who express the greatest surprise that any one should complain of its being quiet even, because they are finding a demand for goods that is extremely pleasing to them. Such divergence of opinion is an indication at least that there are waves of good as well as bad business, and that with things stirring in such a manner it is probable that on the average a very satisfactory trade condition exists. The city trade is admittedly quiet, though gradually showing improvement. Outside of San Francisco, business generally speaking is good, and all things point to better times in the near future.

* * *

As intimated in this paper two months ago, The B. F. Goodrich Co. (Akron, Ohio), have definitely decided to open direct branches on the Pacific coast, and with that object in view have established an office in the Pacific building, on Market street, with Mr. Kirkpatrick in charge, and have gone so far in San Francisco as to have leased a new building on the south side of Market street. The new building is five stories with basement, and has been leased for a term of five years. The firm will be ready to occupy the building with its San Francisco branch about the first of the year. Mr. Kirkpatrick was formerly in charge of the Goodrich tire business of the Gorham Rubber Co. at that firm's branch store on Golden Gate avenue. The Gorham Rubber Co. have been the Pacific coast agents for the Goodrich company for many years, and the change as now contemplated does not affect any part of the agency other than that of the Goodrich tires. That is, the Gorham Rubber Co. will continue to handle all of the Goodrich company's rubber goods for mechanical purposes, druggist's sundries and the like for the entire coast through their stores in this city, Los Angeles, Portland, and Seattle, while the Goodrich company will establish stores in those cities to handle their tire business directly. This leaves the Gorham company without a tire line, and W. J. Gorham and Mr. Heckmann are now visiting certain factories in the East for the purpose of making arrangements for representing some line of automobile tires.

* * *

MR. GEORGE E. HALL, general manager of the Boston Woven Hose and Rubber Co., has been visiting San Francisco and the local manager of the company, Mr. Joseph V. Selby, for the past few days. This was Mr. Hall's first visit to the coast, and he naturally found it one of considerable interest aside from purely business matters, and he expressed himself as being greatly impressed with the remarkable progress of the Far West, and the rebuilding of San Francisco. While here he was entertained at a specially called luncheon of the Pacific Coast Rubber Manufacturers' Association.

* * *

THE annual meeting and election of officers of the Pacific Coast Rubber Manufacturers' Association was held at the Palace Hotel on September 22. The following houses were represented: The American Rubber Manufacturing Co.; the Bowers Rubber Works, Eureka Fire Hose Manufacturing Co., Good-year Rubber Co., Gorham Rubber Co., Pacific Coast Rubber Co., New York Belting and Packing Co., Limited, Boston Woven Hose and Rubber Co., Revere Rubber Co., Gutta Percha and

Rubber Manufacturing Co., and Boston Belting Co. Mr. W. F. Pierce, of the Revere Rubber Co., was elected president; Mr. Henry Martine, of the Gutta Percha and Rubber Manufacturing Co., was elected as vice-president; and Mr. F. G. Sargeant, of the Gorham Rubber Co., treasurer. The new members of the executive committee are W. F. Pierce (chairman); C. F. Chase, of the Bowers Rubber Works; W. E. Crandley, of the Crandley Rubber and Supply Co.; A. H. Gregory, of New York Belting and Packing Co., Limited; and C. F. Winslow, of the Pacific Coast Rubber Co.

* * *

THE Barton Packing and Rubber Co., at No. 531 Howard street, have concluded to devote their exclusive attention to the manufacturing department, which has grown to considerable importance, and with this object in view Mr. Barton has discontinued the jobbing end of the business. R. J. McNeilly, who has acted as sales manager, and Frank Jones, salesman, have both left this firm, and have associated themselves with the Revere Rubber Co.

* * *

THE Western Belting and Hose Co. are now located at No. 518 Mission street, having moved from the former location on Main street. This firm now have the Walker's Fire Engine account, which they report is moving very actively. In fact they report that the past month has been unusually good with them and that business is keeping up fine. Mr. N. S. Dodge, president of the firm, is now on a trip East. The firm were recently favored with a visit from Mr. B. S. Gibbs, from the Manhattan Rubber Manufacturing Co.

* * *

MR. F. S. WINSLOW, manager of the Pacific Coast Rubber Co., of San Francisco, has gone for a trip to New York, making his headquarters with The United States Rubber Co.

Mr. Kelly, from the Republic Rubber Co., is now visiting on the coast. He will return to San Francisco after a visit of a few days in the southern part of the state.

Mr. Selby, the Pacific coast manager of the Boston Woven Hose and Rubber Co., notes it as his impression that business for 1911 is looking a little brighter at this time than it did thirty days ago.

F. C. Anderson, at No. 422 Mission street, sold out on October 3, to the Electric Hose and Rubber Co.

The American Belting and Fabric Co. have been incorporated at Oakland.

* * *

THE board of supervisors of San Francisco have framed an ordinance whereby itinerant merchants and vendors will be charged a license of \$50 per day for engaging in business in this city. This is for the purpose of protecting the established merchant who pays taxes and bears the burdens of government from that class of retailers who open up after the tax levy, and engage in business for a month or two, wherein they dispose of some job lot of rain coats, rubber coats, or what not, and then depart.

RUBBER FACTORY FOR BRAZIL.

THE *Gummi Zeitung* learns that a rubber goods factory is to be established in Jundiáhy, near Sao Paulo, Brazil, with an initial capital of 300 contos [≈about \$100,000]. The city government supports the enterprise, by the remission, for a term of ten years, of all municipal charges and by the contribution of 10 contos towards the purchase of a factory site.



THE B. F. GOODRICH CO.'S BRANCH.
[Nos. 1116-1112 Race street.]



GOODYEAR TIRE AND RUBBER CO.'S BRANCH.
[East Seventh street, near Main.]



VULCANIZING PLANT AT THE GOODRICH BRANCH.



THE DIAMOND RUBBER CO.'S BRANCH.

The Rubber Trade in Cincinnati.

By a Resident Correspondent.

RUBBER manufacturers throughout the country are realizing that the "Queen City" is the logical point from which to bid for business in the South, and that this city is the gateway through which Dixie's industrial progress passes. Within a few months past there have sprung up a number of branch houses of prominent rubber companies who have come to look upon Cincinnati as the headquarters for their business in the southland.

Among the first to come to this realization was The B. F. Goodrich Co., of Akron. About four months ago this company sent representatives to Cincinnati to establish a branch house. It was discovered that a building that would answer all purposes was not available, and a site was then looked for upon which the company could erect its own building. A site was secured at Nos. 1114-16 Race street, on which a long term lease was consummated. An architect was employed and plans for a building were prepared, before the general public was aware of what was in prospect. The building has now been completed, and the new branch is now in full operation.

In point of architecture and appointments, the Goodrich building is one of the attractive business buildings in this city, and is an ornament to that section in which it is located. The building is 21 x 110 feet, with sandstone front and of reinforced concrete, making it fireproof. There are two stories and basement. The first floor is given over to offices and salesrooms. The second floor is devoted to the mechanical department. Here is equipped one of the most complete outfits to be found anywhere outside of a rubber factory. A pot heater for recovering tires has been installed which will accommodate any size tire from a 26x3 to a 43x6. This pot heater is one of the largest in the country. Beside a pot heater there are several vulcanizers, steam tables and other machinery to be found only in a rubber factory.

The installation of a mechanical department in connection with the new Goodrich branch was for the purpose of lessening time in making repairs. Instead of sending tires to the factory at Akron, they are shipped direct to the Cincinnati branch from the South to be repaired. The basement is given over to a stock room and here is to be found one of the largest stocks of rubber goods to be found in any city in the country.

The illustration shown in this paper of The B. F. Goodrich Co.'s repair department is one of the most complete and modern tire repair plants possible. Furnishing its own steam with its own steam vulcanizer and patching press, it will no longer be necessary to send tires to the Akron factory for retreading, or, indeed, any kind of repairs. The equipment covers every type of repair that is practical, for both shoes and inner tubes.

The Goodrich company are installing a high-pressure tank which will have an air line running to the front and rear of the building. This will afford automobilists opportunity of filling their tires at all times. The tank will have a pressure of 100 pounds.

The local Goodrich branch is in charge of Mr. J. V. Blake, who was formerly on the road for the company, covering the Michigan territory. The territory covered from the local branch comprises southern Ohio, all of Kentucky, part of Tennessee, part of West Virginia, and southern Indiana. At Louisville, Kentucky, is to be operated a depot in connection with the Cincinnati branch, and this depot will be in charge of an expert mechanic from the factory.

* * *

THE Diamond Rubber Co., of Akron, have leased a building at Nos. 807-809 Race street, which has been completely remodeled, so as to accommodate it to the needs of the company for

this territory. The building is 26 feet wide and two stories high. It has a stone front and is a fine specimen of architecture. The first floor is given up to offices and salesrooms, while the second floor is used as a stock room, and a complete line is carried. The offices are among the most up-to-date offices in the city.

The Diamond branch is in charge of Mr. Edwin B. Tozier, and the territory covered is similar to that covered by the Goodrich company from this point. A branch in this city is not new with the Diamond, for it has maintained a branch in this city on Elm street for some time, and also an agency. The branch handled pneumatic tires, while the agency handled solid tires and rubber goods. These two have been combined and are now being operated from the new branch.

* * *

Not to be outdone by its competitors, the Goodyear Tire and Rubber Co., of Akron, have expanded and secured a building in the heart of the automobile district of the city. This company has leased for a long term a building on East Seventh street, near Main. Within a radius of one block from this building there are more automobile salesrooms than in any other section of Cincinnati. Mr. H. L. Smith is in charge of the Goodyear branch as manager. The territory covered by the company from this branch is similar to that covered by the Goodrich and the Diamond.

* * *

MORGAN & WRIGHT, of Detroit, have also joined the Cincinnati colony, having a branch on Main street near Eighth. It is reported that this company are looking for larger quarters, and in the event that a suitable building cannot be found, it is the intention of the company to build its own structure.

During the past several days, the Hartford Rubber Works Co. have had representatives in this city, looking for a building for the purpose of establishing a branch. It is reported that this company will also erect their own building here very shortly.

Besides the above mentioned companies having branches here, the Firestone, Swinehart, and Kelly-Springfield companies operate branches in Cincinnati.

* * *

RUBBER tire manufacturers, and especially those who have branch houses in Cincinnati, are much interested in the announcement of a plan to establish an independent or coöperative tire manufacturing plant. The question of establishing such a plant, to supply all auto owners who are members of the American Automobile Association with tires at cost originated with the Cincinnati Automobile Club at a recent meeting, and a committee has been appointed to meet with officials of the American Automobile Association with a view of interesting the latter in the scheme.

The originator of the plan is Mr. H. C. Mather, who is connected with the Charles H. Moore Oil Co., of Cincinnati. In speaking of his plan, Mr. Mather states that it is his opinion that manufacturers of automobile tires are demanding too much money for their products, in view of the fact that rubber has slumped sharply in price of late. He believes the only solution of the automobile tire problem in this country lies in the suggestion that the American Automobile Association operate its own factory and manufacture tires, and that the product be sold to members of the Association only at as nearly cost as possible, the primary idea not being to make money from the enterprise.

According to the plan of Mr. Mather, he would have all members of the Association subscribe to a number of shares of

stock and that if each member would subscribe to \$300 or \$400 worth of stock the amount that could be raised would be sufficient to operate a large plant and maintain it. Managers of the local branches of the big rubber tire manufacturers when seen relative to the scheme proposed by the local automobile club, looked upon the scheme with considerable doubt if such a plan could be worked out.

* * *

COUGHLIN & DAVIS, who are reputed to be the largest buyers of automobile tires in the Central West and who carry all the leading makes in stock, have dissolved partnership, Mr. C. D. Coughlin retiring from the firm. This firm is well known in the rubber trade throughout the United States. Mr. J. R. Burgamy, who for a number of years has been city salesman for Morgan & Wright, has resigned to associate himself with Coughlin & Davis.

* * *

THERE was argued in the United States court of appeals in this city several days ago and submitted, the case of the Rub-

ber Tire Wheel Co., and the Consolidated Rubber Tire Co. against the Goodyear Tire and Rubber Co. The suit was originally brought because of an alleged infringement of certain patents. Rubber manufacturers throughout this section are interested in the decision of the court of appeals with reference to this case.

* * *

LOCAL rubber dealers, together with Cincinnati chemists listened recently to an interesting discussion of "Protal-Backelite," a new substitute for rubber. An interesting paper describing the new substitute was read before the Cincinnati chapter of the American Chemical Society at its meeting in this city several days ago by Professor H. M. Goetsch, of the University of Cincinnati. The speaker contended that the new substitute would ultimately oust rubber from its present monopoly, and would go far toward keeping down the price of rubber. Professor Goetsch declared that Protal has been found by demonstration to be adapted for automobile tires, as well as all the uses of hard rubber.

The Rubber Trade at Akron, Ohio.

By a Resident Correspondent.

THE shareholders of The Diamond Rubber Co. held their annual meeting on October 19, when the old directors were reelected, with the exception that G. E. Norwood, assistant treasurer, was placed on the board to fill the vacancy caused by the retirement of O. S. Hart, who resigned and is now traveling. Mr. Hart was cashier of the company. The board now stands: F. A. Hardy (Chicago), Ohio C. Barber, A. H. Marks, W. B. Miller, R. C. Lake (Chicago), G. E. Norwood, and A. H. Noah. The directors met and reelected the officers as follows:

*President—F. A. HARDY.
Vice-President—A. H. MARKS.
Secretary—W. B. MILLER.
Treasurer—A. H. NOAH.*

The reports submitted showed a year of unprecedented prosperity, and expressed the prediction that the coming season will not be dull, by any means. "We have a great deal of raw material on hand," Treasurer Noah said, "and have enough contracts to make the outlook very encouraging." During the year the company have erected four new buildings, increasing the working floor space to 31 acres, and added 1,200 to the number of employes, the clerical and selling forces now amounting to 5,500. The company have obtained exclusive rights for the manufacture of the Palmer Cord tire, controlled by the India-Rubber, Gutta-Percha, and Telegraph Works Co., Limited, of Silvertown, London. The dividend declared for the year was 14 per cent.

* * *

One of the very large structures that The B. F. Goodrich Co. are adding to their plant is a manufacturing building which, when completed, will be 100x500 feet long, and six stories high. The first unit of this building, the construction of which is now under way, will be 100x140 feet. The basement will be used entirely for belt and mat presses, the ground floor for belt making, and the second floor for the manufacture of mats. The uses of the other floors have as yet been undetermined. The building will have two high-speed electric freight elevators. The form of structure consists of riveted steel columns and girders protected by concrete, and reinforced concrete floors. The walls are of brick, and the building fireproof throughout.

* * *

The American Tire and Rubber Co., capitalized at \$200,000, [see THE INDIA RUBBER WORLD, October 1, 1910—page 30] and whose chief claim to distinction lies in the possession of a secret of mechanical process for reclaiming rubber, have purchased a site and will begin work upon the construction of a factory at once, it is announced. The company will manufacture carriage

and vehicle tires, as well as automobile tires, inner tubes, and a general line of mechanical goods. The officers of the concern are Adam Duncan, president; Gilbert C. Waltz, vice president; F. L. Kryder, secretary and treasurer, and W. J. Yeager, superintendent.

* * *

THE department of rubber chemistry of Buchtel College, it is expected, will receive much of the attention of the Ohio State Academy of Science when that organization meets at the Knight chemical laboratory of the college on November 24-26. At a general meeting to be held the last day of the meeting, the scientific side of the rubber industry will be discussed, and an address probably will be delivered by some one, as yet unselected, who is well versed in rubber.

* * *

W. W. WILDMAN, general manager of the United Rubber Co., of Barberton, has been selected a director of the new Portage Rubber Co. to succeed Will Christy, who recently explained in a public statement that he had severed his connection with the company because, he said, its promises of profits to the prospective investor were too glowing. The Portage company are to invest \$100,000 of its \$500,000 cash capital in the business of the United Rubber Co., the reclaiming capacity of which is to be doubled.

* * *

THE rapid growth of the Goodyear Tire and Rubber Co. is evidenced not alone by the construction in Akron of several large buildings, but by its continual branching out as well. An office has been opened in Toledo, Ohio, under the management of M. M. Norton, and another branch, opened recently in Dallas, Texas, is in charge of Herman Coulter.

Mr. G. M. Stadelman, secretary of the Goodyear Tire and Rubber Co., is combining business with pleasure on a vacation trip upon which he set out not long ago, bound for the picturesque wilds of northern Canada. Returning, he will visit Goodyear agencies along the Pacific coast and throughout the West.

Mr. Frank E. Cooke, of the Bruner-Goodhue-Cooke Building and Loan Association, says that so many Akron people have invested their savings in rubber stocks that a consequent marked money tightness has been noticeable for several months past.

Failure of shipments of iron to arrive will delay the completion of the Firestone Tire and Rubber Co.'s new office and factory buildings until after the first of the year.



THE FIRESTONE TIRE AND RUBBER COMPANY'S SALESMEN'S CONVENTION.

Top Row—H. E. Riker, R. E. Wolcott, F. H. Moyer, L. Greenwald, C. A. Myers, Ole Hibner, W. E. Fouse, A. W. Moore, H. L. Beers, J. P. Patterson, K. R. Corner, H. Kubler, C. H. Gerhold, P. B. Talbott, E. M. Humphrey, H. C. Brenizer, J. W. Thomas.

Second Row—E. P. Palmer, L. F. Birdsong, A. L. Schavoir, O. E. Johnson, F. C. Burt, H. E. Esterly, F. W. Telford, R. L. Harpham, F. M. Moore, G. M. Martin, Geo. Eckel, P. F. Rohrbacher, C. M. Folger, G. A. Talbott.

Third Row—W. H. Jenks, N. B. Burwell, H. W. Makley, W. F. Ridge, W. G. Bedford, R. D. Bart, R. W. Phelps, R. W. Ingersoll, J. F. Cast,

Wm. O'Neil, W. A. Simonson, W. L. Esterly, J. H. Irwin, F. E. Gahagan.

Fourth Row—W. A. Clark, C. C. Eichelberger, S. N. Harris, J. G. Robertson, S. G. Clarkhuff, R. J. Firestone, H. S. Firestone (Pres.), A. C. Miller, Will Christy, T. J. Glenn, E. L. Campion, W. F. West, W. A. Harshaw, O. Fenstermacher, A. F. Sheldon.

Fifth Row—R. H. Turner, W. C. Mayville, C. E. Jackson, J. V. Mowe, D. C. Swander, W. R. Walton, F. H. Martin, Chas. Habegger, W. H. Rowerdink, R. E. Warner, A. G. Partridge, O. A. Lazenby, F. L. Black, W. T. Brown, D. B. Price.

Bottom Row—J. A. Smith, J. F. Singleton, E. S. Firestone, W. W. Robertson, P. B. Bosworth, B. N. Beedon, D. F. White, W. F. Bailey.

In the early days of the Diamond Rubber Co., C. H. Palmer, who retired a few days ago from the Diamond Match Co., sold a third interest in the enterprise for \$32,000. To-day, it is estimated he could have collected about \$9,000,000 on proportionately the same amount of stock.

The Firestone Tire and Rubber Co. are shortly to open a new branch office in San Francisco, especially adapted for the storage of tires, and as a general exhibiting point for the Pacific coast.

FIRESTONE COMPANY'S ANNUAL CONFERENCE.

THE recent yearly conference of the officers, branch managers, agents, and salesmen of the Firestone Tire and Rubber Co., at Akron, Ohio [see THE INDIA RUBBER WORLD, October 1, 1910—page 26], was by all odds the best the company have ever held. It was not only full of enthusiasm but of great value to those present. The illustration on this page shows the Firestone selling organization, while in the background is the framework of a new factory, which is said to include the largest single building in the world devoted to the manufacture of tires. The names of those in attendance are printed under the illustration on this page.

The main building of the new plant covers a ground space of 265 x 360 feet. The basement and first floor cover this entire space, but the upper floors are cut into by courts for purposes of ventilation and light. As the company confine themselves to the tire manufacture, the whole structure may be designated as a tire building.

The Firestone Company were referred to recently as having booked already for the coming season orders for automobile tires of a value exceeding \$2,000,000. They naturally are not pessimistic as to the trade outlook.

AN OLD GUTTA-PERCHA PIPE.

WHILE strolling on the sand at Rockaway Beach, near New York, recently, Mr. John J. Ridgway, engaged in the conveyor belting business at No. 207 Fulton street, came across an odd section of piping, which evidently had been buried there for a long period. No one in the vicinity could explain the presence there of such an article, and no one in the trade to whom it was exhibited was prepared to give any account of its history. Without doubt this is a relic of the gutta-percha water pipe system installed sixty years ago, to connect New York city with adjacent islands. In 1850 a contract was made with the American Gutta-Percha Co. (now the Bishop Gutta-Percha Co.) to lay a pipe from the foot of East Seventy-ninth street to Blackwell's island. This pipe was 3 inches outside diameter and $\frac{3}{8}$ inch thick, made in lengths of 9 feet. These were joined by inserting one end of each length into the end of the next, while heated in hot water, thus making a permanent joint. For the purpose of anchoring the pipe on the bed of the river, collars of gutta-percha were placed round the pipe at regular intervals and over these cast iron anchors were hung. Subsequently other gutta-percha pipes were in service around the city, some of them as recently as 1868, but these varied in construction from the pipe first mentioned in this article. From its appearance the section found by Mr. Ridgway seems likely to have been a relic of the first pipe laid. A fuller account of the gutta-percha water pipe appeared in THE INDIA RUBBER WORLD, June 10, 1896 (page 261).

A BOOK for everybody interested in tires—"Rubber Tires and All About Them"—this office.

THE RUBBER TRADE IN CHICAGO.

BY A RESIDENT CORRESPONDENT.

THE recent decline in the price of crude rubber is now having its effect on the rubber goods trade, and is reflected through the Chicago branches of the Eastern houses. The railroad companies and the industrial concerns who buy the bulk of the rubber goods distributed in Chicago are not buying as freely as they were a month or two ago, evidently looking for a drop in the prices of manufactured products. They do not seem to take into consideration the fact that the present stocks of goods in the hands of supply houses and manufacturers are based upon crude rubber at the old price.

Those big consumers who purchase their supplies on yearly contracts are hanging off, and do not seem to be in a hurry to renew their contracts at the present time. Their contracts begin to lapse usually in October and continue to expire until the end of the year. A number of the big houses usually have their year's supply contracted for before this time.

The local trade does not look for any great reduction in price, and consequently does not believe that the purchasing agents who are holding back will gain much, if anything, by the delay. While the manufacturers agreed early in the summer to maintain the present accepted prices for manufactured goods until the market on crude rubber had become more certain and regular, some price cutting of "independent" manufacturers is reported. The fact that the manufacturers are maintaining their prices and that business is holding off as a result indicates a healthy condition in the trade any way, and they believe that this accepted and generally understood attitude will give a much better result in the end than if they cut prices and attempt to make immediate contracts for next year's delivery.

* * *

JOBBERS of rubber sundries state that holiday buying is interesting their trade, and they do not expect to do much until the reorders begin to come in after the first of the year. The retail merchants are pretty well stocked at the present, according to salesmen's reports fresh from the field.

* * *

THE rubber business here has been affected like all other trades by the demoralizing influence of politics, but as soon as the November elections clear the air of speculative talk, and the bumper crops begin to move, the trade feels assured that business will be better than it has been for several years. One Chicago manufacturers says: "Business men have grown to be very sensitive about trade reports, not to mention conditions, and the slightest rumor causes them to be hesitant and carefully conservative and draw in whatever business extensions they have in hand."

* * *

GENERALLY speaking, the distributors of tires are having the best business in rubber lines in Chicago at the present time. They do not seem to have any trouble in taking orders for all the goods they can furnish.

* * *

THE Vail Rubber Works, one of Chicago's new factories which was started last January to manufacture all kinds of molded rubber goods and mechanical supplies, has reorganized under the new name of the Vail Rubber Co. This company is a close corporation with \$16,000 capital, all paid. The factory is at No. 301 West Indiana street. William A. Vail is president; William H. McCoy, Sr., vice president; and William H. McCoy, Jr., secretary and treasurer.

* * *

H. B. HARMER, well known to tire people, has succeeded Fred Cropley in the management of the Chicago branch of the G & J Tire Co. Mr. Cropley will devote his time to the automobile sales business.

THE New Jersey Car Spring & Rubber Co. report a very satisfactory volume of business since opening an office in Chicago on May 1. They have had unusual success in marketing their "Arcadia" brand of belts, and the sale of fire hose is exceedingly good.

* * *

THE Illinois Tire Co. is a new incorporation of the month, dealing in automobiles supplies. The company has a capital stock of \$2,400. Incorporators: M. L. Burkhardt, F. L. Jackson and L. E. Gates.

* * *

MR. CHARLES A. HUNTER, president of the Peerless Rubber Manufacturing Co., spent a few days in the Chicago office during the early portion of the month. Mr. William Hillman stopped off for a few days in Chicago on his way East, returning from a short visit to the Denver office of the company. The Denver office was started less than a year ago and is doing a very handsome business.

* * *

THE Republic Rubber Co. are rushing the construction of their new five story steel building which will be devoted exclusively to the manufacture of Republic "Staggard tread" tires. The building is expected to be one of the largest and best equipped in the rubber industry.

* * *

THE Chicago office of the Hamilton Rubber Manufacturing Co. has removed from its old location at No. 161 Lake street, which it occupied for over ten years, to larger quarters at No. 171 Randolph street. Elmer E. Bast, manager, states that the new office will give them 6,400 square feet of floor space, which is nearly twice as much as they had on Lake street. This has been the biggest year the Chicago office has ever had, and Mr. Bast believes next year's business will be even greater.

* * *

A CHICAGO manufacturer has brought out a patented leather hose which he intends to start manufacturing in a few weeks. The hose is made of chrome leather, which is impervious to water and reasonably pliable. Chrome leather is put through a mineral process instead of the usual bark tannage. It will be made primarily for use on railway air brakes, but is said to be convertible to almost every use to which rubber hose is put. This new leather hose recalls the time when the Chicago fire department used leather hose exclusively 25 years ago.

INTERCONTINENTAL RUBBER CO.

AT the annual meeting of the Intercontinental Rubber Co. (Jersey City, New Jersey, October 3) the number of directors was increased from nine to eleven. The old directors reelected are Edward B. Aldrich, Nelson W. Aldrich, Herman B. Baruch, Henry A. Bingham, Daniel Guggenheim, S. B. Guggenheim, Paul Morton, Allan A. Ryan, and William Sproule. The new directors are Charles H. Sabin, vice president of the Guaranty Trust Co., and Walter Dutton, secretary of the company. Edward B. Aldrich has been reelected vice president and treasurer, and Walter Dutton reelected secretary and assistant treasurer. Willard T. Smith has been elected assistant secretary. The office of president remains vacant.

The financial statement submitted showed that on January 1 last there was an accumulation of unpaid preferred stock dividends amounting to \$765,441.03, or about 18¼ per cent. These have been paid, and in addition quarterly dividends at the rate of 7 per cent. per year have since been paid on the preferred stock. A first dividend of 1 per cent has been declared on the common stock, payable on November 1. During the year the outstanding preferred shares of the company have been reduced to \$2,000,000, thereby reducing the dividend charge ahead of the common stock to \$140,000 per year.

The statement concludes: "The fiscal year closed on July 31, 1910, has been a very profitable one for the company, notwithstanding the fact that we were unable to get the full benefit of the rise in rubber prices during the year on account of some rubber contracts already in force. The contracts already entered into for the sale of our product during the present fiscal year cover approximately three-quarters of the expected output, and the prices average higher than the company has received during the last fiscal year."

BALANCE SHEET JULY 31, 1910.

ASSETS.

Investments	\$30,040,464.13
Accounts and Notes Receivable:	
Advances to subsidiary companies	\$2,473,912.10
Sundry	140,492.91
Cash	2,620,405.01
	1,131,517.80
	\$33,792,386.94

LIABILITIES.

Capital Stock:	
Common	\$20,031,000.00
Preferred	3,150,000.00
Total capital stock outstanding	32,181,000.00
Accounts payable, taxes accrued, etc.	31,020.71
General reserve account	1,050,000.00
Surplus	530,366.23
	\$33,792,386.94

SURPLUS ACCOUNT.

Surplus August 1, 1900	\$248,943.00
Gross Profits for year	\$2,369,794.72
Less:	
Administration and General Expenses ..	101,610.95
Net profit for year	2,268,183.77
Total	2,517,127.70
Charges against Surplus:	
Preliminary expenses charged off..	\$24,320.50
Amount transferred to general reserve account, equal to the preferred stock retired during the year	1,050,000.00
Dividends paid	912,441.03
	1,986,761.53
Surplus, July 31, 1910	\$530,366.23

RUBBER PRODUCTION OF BOLIVIA.

THE rubber exports of Bolivia have again nearly reached the proportions credited to that republic before the alienation of the Acre territory, at the end of 1902. The latest statistics of exports, relating to the calendar year 1909, are analyzed in the table herewith, both by customs ports and the outlets to the world's markets:

	Pounds.
<i>Via the Madeira:</i>	
Villa Bella	3,681,891
Itinéz San Matias.....	42,611
<i>Via the Pacific:</i>	
Oruro	110,642
Guaqui	57,988
Puerto Perez	565,704
Bahia Cobija	1,558,311
Pelechuco	173,320
<i>Through Argentina:</i>	
Puerto Suarez	438,097
Tarija	86,836
Total	6,715,400

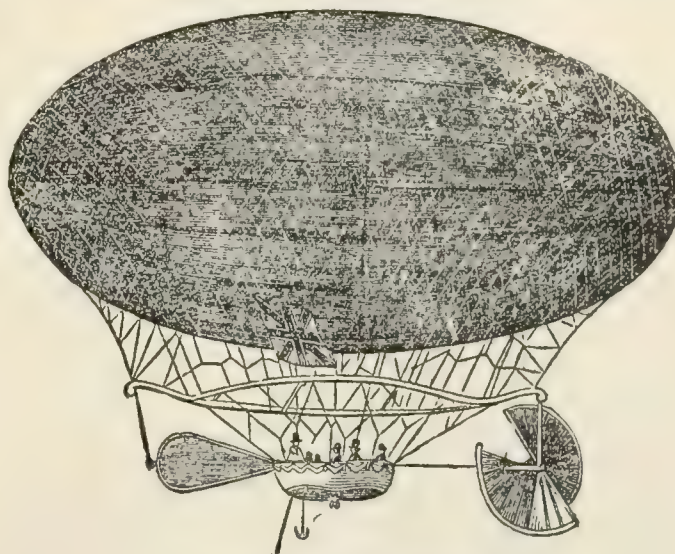
The exports for twelve years past have been as follows (in pounds). Up to, and including, 1902, the Acre production was credited to Bolivia. Since that date the Acre territory has belonged to Brazil:

1898.....6,943,100	1902.....4,186,585	1906.....4,245,138
1899.....4,708,000	1903.....2,906,274	1907.....4,027,129
1900.....7,691,728	1904.....3,456,481	1908.....4,000,011
1901.....7,623,138	1905.....3,720,908	1909.....6,715,400

AN EARLY BALLOON HOAX.

THE most recent achievements in aviation have not excited more popular interest than did a publication in the *New York Sun* of April 13, 1844, announcing the arrival of a balloon from Europe, carrying 8 passengers, after a voyage of only three days. In those days, antedating the telegraph, the papers were less crowded with news than in these times, and an opportunity offered now and then for perpetrating a "hoax" upon their readers, which was duly appreciated on all hands when the whole thing was exposed. The circumstantial account of the safe trip of Mr. Mason's "flying machine" the *Victoria* filled a good sized newspaper page, written in most convincing style, and accompanied by what purported to be a picture of the balloon when in flight. The picture printed by the *Sun* in 1844 is reproduced on this page.

There are several things about the *Victoria* report to recall scriptural assertion that "there is nothing new under the sun." As will appear from the picture, the imaginary flying machine consisted of an inflated bag, from which was suspended a car for passengers, the whole being provided with propeller and steering gear. Among the details of construction given it is



MODEL OF THE "VICTORIA"

[From the *New York Sun*, April 13, 1844.]

mentioned that "The balloon is composed of silk, varnished with the liquid gum caoutchouc."

The author of the *Sun's* "balloon hoax" was Edgar Allan Poe, the noted poet and writer of tales. At the date of the appearance of the hoax, as is now known, Poe had not achieved fame, and was greatly pressed for money. Doubtless he won enough for his story to tide him over a serious difficulty. The renown of Poe has become enhanced with the progress of time, and within the past month his name has been accepted for inclusion in the "Hall of Fame for Great Americans," organized in connection with the New York University.

Speaking of the Hall of Fame, the name of Charles Goodyear has been mentioned for this honor for some years past. [See *THE INDIA RUBBER WORLD*, December 1, 1900, page 75.] In the balloting by the electors on October 21, seven votes were cast for Goodyear, 51 votes being requisite for admission to a niche.

THE Paris branch of the B. F. Goodrich Co. mentioned in the last *INDIA RUBBER WORLD* (page 443) has been organized as the Société Française B. F. Goodrich, with a capital of 2,500,000 francs [= \$482,500]. The domicile is at Avenue de la Grande Armée 38 bis.

New Rubber Goods in the Market.

WEARIVER MOLDED WATER BOTTLE

THIS bottle is made in a mold, under very high pressure, into one solid piece, from the very finest quality maroon rubber—is absolutely free from seams and has no weak points to give way while in use. The surface being perfectly smooth makes it absolutely sanitary. Another feature of this



"WEARIVER" MOLDED WATER BOTTLE

bottle is the large, roomy funnel or mouth, permitting the same to be firmly grasped and easily filled. This bottle is a most serviceable and practical one for hospital use. [The Faultless Rubber Co., Ashland, Ohio.]

RUBBERIZED LEATHER FOOTBALL COVERS.

It is stated that new lines which are arousing considerable interest in the British trade are the rubberized foot balls covered with a substance coated on the outside with rubber, whereby perfect waterproofing is secured. The rubberized balls are receiving a trial this season and their wearing qualities are being put to an exhaustive test.

WALPOLE RUBBER HEELS FOR HORSES.

AN important rubber firm who for years have specialized on rubber heels for human beings, are now in the field with rubber heels for horses. They are manufacturing Pearl's patent reinforced heel. They are made of rubber, covered with tempered reinforced spring heel, making them exceedingly resilient. The



Heavy Express Shoe.



Draft Truss Shoe.

SHOE HEELS FOR THE HORSES.

steel spring plate furnishes a large bearing surface for the frog. This heel also protects the heel from wear, and maintains an even pressure. Further than this, it allows the joint of the foot to flex naturally. They are made in eleven styles, from heavy ex-

press to racing. The illustrations show (1) the reverse side of the heavy express truss shoe, the blackened section representing the spring steel plate, and (2) the heavy draft shoe truss, showing face of the shoe. [Walpole Rubber Works, Walpole, Massachusetts.]

WOMAN'S WHITE RUBBER COAT.

THE distinct departure from conventional colors in rubber surfaced clothing has been accomplished in the production of a pure white rubber coat for ladies and misses. The rubber is the thinnest possible coating, as light in weight as if gossamer spread, and of a high grade compound. To relieve the almost startling whiteness of the garment, broad cuffs and standing collar of black satin are attached. The coat is thoroughly modern as far as cut goes, is double breasted, and has large patch pockets over which hang protective flaps. It has ventilated armholes and is fastened down the front with a dozen large pearl buttons, pockets and cuffs being ornamented with the same kind of buttons. [Fox, Stiefel & Co., New York.]

THE "FLASH" SKIRT MARKER.

THE device illustrated here is meant to mark any skirt, of any fabric, color, or size, instantaneously and with unerring precision. The cut shows a customer standing on the marker, with



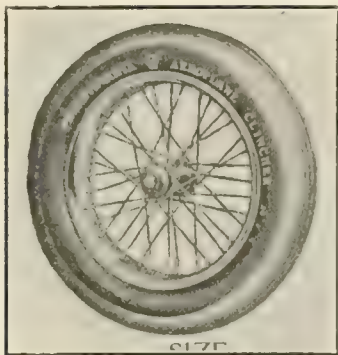
THE "FLASH" SKIRT MARKER.

marking arms adjusted to the proper height. All that the fitter has to do is press the bulbs. [Julius L. Gutman, No. 467 Broadway, New York.]

AEROPLANE CLINCHER TIRES.

THE pneumatic tired wheels upon which the body of an aeroplane rests while on the ground are an important factor. Upon them depends the ease of start and finish so necessary to both the occupants and to the machine itself. The number of wheels used varies from one on the monoplane tail, to two, three and four, depending upon the type of machine. They must be as light as possible and are usually of wire construction. The tires are of the best material, of generous size and easily adjustable. The clincher type has been found to be the most advisable so far. This table gives the size and corresponding weight usually furnished:

Size.	Weight complete.	Size.	Weight complete.
20x4 inches.	6¼ pounds.	28x3 inches.	8 pounds.
26x2½ inches.	6½ pounds.	28x3½ inches.	8¾ pounds.
28x2½ inches.	7½ pounds.		



AEROPLANE CLINCHER TIRE.

The illustration shows an aeroplane wheel and tire manufactured by the Pennsylvania Rubber Co. (Jeannette, Pennsylvania). Aeroplane tires, in spite of the fact that they work only when the machine is starting and alighting, undergo some service. The rush of the start, and the oftentimes hard shock of landing, call for strength and toughness. A weak tire might burst and cripple the machine. In their cloud journeys they are idle and do not pick up nails, nor is the aerial skidding ever laid to them. Two styles are in vogue, those with a leather tread, and the ordinary rubber surfaced tire. So far no aeronaut has complained of heating; indeed, after a flight the surface of the tire is often as cold as ice.

THE O'KANUS FACE WATER BOTTLE.

THE O'Kanus brand of water bottles and like goods are made up in various colors, to suit the tastes of buyers—white, slate, white-slate trim, and slate-white trim. All the goods of this brand are packed in flat telescope boxes, with a new form of hinged platform for fittings. An interesting item in this line of goods is the O'Kanus face water bottle, made in the same way as the larger bottles in this line. The shape of the face water bottles is admirably adapted for the purpose for which they are intended. They are made in three sizes—one-fourth pint, one-half pint, and one pint. By the way, these bottles are recommended also for infants. [The Miller Rubber Co., Akron, Ohio.]



O'KANUS FACE WATER BOTTLE.

RUBBER GOODS IN AVIATION.

In connection with the aviation meet at Belmont Park, near New York (October 22-30), were exhibited a great variety of aeroplane engines, propellers, and appurtenances. Of special interest to rubber men were the exhibits in their own line.

For example, the Goodyear Tire & Rubber Co. (Akron, Ohio) exhibited a full line of tires for aeroplanes, together with aeroplane and balloon fabrics.

The Hartford Rubber Works Co. showed three types of single tube aeroplane tires, called "the Hartford Aviator," "Aeroplane," and "Aeronaut," respectively. They had on exhibition also Hartford clincher airship tires in regulation sizes. The Hartford Aero varnish was another specialty that was evident in their exhibit.

The new Century Rubber Trading Co. showed a full line of automobile tires which were explained by Mr. Nathan Baruch.

An interesting exhibit was that of aviator cord and aviator wire, made by John A. Roebling's Sons Co. (Trenton, New Jersey).

THE BALDWIN AEROPLANE FABRIC.

For aeroplanes and balloons a silk double walled, vulcanized fabric, claimed to have ten times the wear of varnished stuffs used, has been accepted by the United States government for balloons, dirigible and spherical. This material, it has been proved, requires little care, is not subject to spontaneous combustion, will not crack and is of course waterproof. Its breaking strain is 100 pounds per inch width. [Thomas S. Baldwin, Madison Square, New York.]

AVIATION SUITS.

THE man who runs an aeroplane oftentimes gets very wet and cold, unless properly clothed. To be anywhere near comfortable he must be encased from top to toe in waterproof and cold-proof clothing. Such clothing must, moreover, be light, flexible, and not bulky. Suits of very light waterproof leather are often worn. What interests the rubber trade more, however, are the



THE "J. M." AVIATOR SUIT.

double textured suits made of special tweeds, extra light in weight, and absolutely wind and weather proof. The illustration shows one of these suits which is known as the "J. M." aviator suit and exhibits its construction so well that no explanation is necessary. [J. Mandleberg & Co., Limited, Manchester, England.]

FRENCH AVIATION CLOTHING COMPETITION.

THE Ligue Nationale Aérienne have organized several competitions with the object of rendering aviation safer and pleasanter. One of these competitions is for protective clothing from wind, cold, and water, for the aviator.

CRAVENETTE POPLIN.

POPLIN, a popular fabric for ladies' and children's gowns, is made of cotton but is very silky in appearance. "Cravenette Poplin" is the same material, but is water repellent, stainproof,

will not crack, and can be sponged, washed and pressed, as neither water nor heat can harm its luster or durability. [Neuss, Hesslein & Co., No. 43 White street, New York.]

NOVELTIES IN RUBBER FOOTWEAR.

THE rubber footwear catalogues for 1911 will show a new line of men's rubbers made on the "Military" last, which is designed to be worn with the "Military" leather shoes now considerably affected in different parts of the country, especially in the West. This new Military line in rubbers has a thick toe and a high heel. It will appear in practically all the catalogues issued by the United States Rubber Co.

Most of the new catalogues will show, in addition to the "Military" last, a medium high heel, which the American company calls the "Suffolk," the Banigan company calls the "Hudson," the Candee company calls the "Autocrat," and the Woonsocket company calls the "Fulton."

A number of the new rubber catalogues will show a variety of new women's lasts to cover the various degrees of high heel which are now made in leather shoes for women. For instance, the Woonsocket catalogues will show a Cuban heel last, which is what might be called the first stage of the high heel—that is, high heel in its lowest form. The next gradation is covered by the "Ashley" last, which has a heel of medium height. The extreme high heel leather shoe has its counterpart in rubbers in the Woonsocket "Vesta," which has a short vamp and a heel nearly two inches high. These three lasts are made both in croquets and in storm rubbers.

The introduction of these new high heel rubbers in various forms shows how closely rubber manufacturers follow the new styles in leather footwear, even when these styles go to extremes which naturally have only a temporary vogue.

A new 4-buckle gaiter will appear in most of the catalogues for the coming year for the first time. It is called the "Walrus," and is a 4-buckle snow excluder made entirely of rubber. This is made with an ordinary sole, and is also made with what is known as a "Railroad Sole"—that is, a full double sole. An illustration of this "Railroad Walrus" will appear in the Boston catalogue.

AN IMPROVEMENT ON THE RUBBER FORCE CUP.

THE "Little Giant" household pump, the salient points of which are a patent lift and force cup, is said to be exceedingly effective in the removal of obstructions in waste pipes. [J. E. Kennedy, New York.]

THE CEYLON RUBBER MARKET.

AN important feature in the rubber trade of the Far East will be the installation on November 4, of weekly auction sales at the Chamber of Commerce sale rooms, in Colombo. The effect of the fortnightly auctions in London and Liverpool for a number of years past has been to fix prices of crude rubber, not only in those markets but elsewhere, to an extent which could be arrived at probably by no other means so satisfactorily.

When actual rubber is offered at a London auction, if sold, it brings a price which marks its real value to consumers, and while prices may change before the next auction, the result attained at any given sale forms a basis for any transaction which may take place privately up to the date of the next sale. The advantages of this method of arriving at rubber prices have been appreciated by the interests back of the newer rubber market at Antwerp—where all the rubber arriving is first offered at auction—and still later at Havre, Bordeaux, and Amsterdam. Colombo is becoming a central market for plantation rubber in the Far East, its shipping facilities giving that port an important advantage, in addition to the fact that so much rubber is now being produced on the island of Ceylon.

One stimulant to the organization of rubber sales at Colombo has been the success of the weekly tea sales which have been con-

ducted in the Chamber of Commerce rooms there for the past 25 years.

OBITUARY.

BENJAMIN F. JACQUITH, died at Swan's Island, Maine, on September 29, in his eighty-ninth year. Born at Andover, Massachusetts, on February 14, 1822, he went at an early age to Boston, where he found employment in the shoe jobbing house of T. C. Wales, who was one of the first, if not the first, to import into the United States the crude rubber shoes made by the natives of the Amazon region. In time Mr. Jacquith engaged in the footwear trade on his own account, but always making a specialty of rubber boots and shoes. In 1892, by which time he had established important houses in Boston, New York, Chicago, and Des Moines, he turned over the business to his sons, retire from active control of affairs. He had a widespread acquaintance with the trade, and his friends were legion. He was apparently in good health when he went away for a vacation in the past summer, and his final illness was of short duration. Funeral services were conducted at his late residence, No. 1 Exeter street, Boston, by the Rev. George A. Gordon, of the Old South Church (of which he was a member), and the interment was in the family lot at Andover. Mrs. Jacquith died some five years earlier.

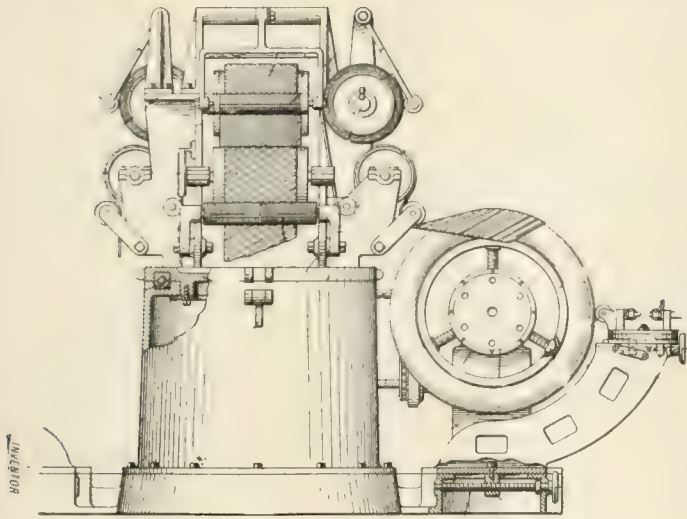
FRANK N. WHITE.

THE news comes from London just as THE INDIA RUBBER WORLD goes to press, of the death in that city on September 26 of Frank N. White. He was long identified with the rubber trade in the United States, after having first been interested in the bicycle business. He was in charge of the New York Tire Co. for several years, their tires being made by the Revere Rubber Co., and when the Tire company was taken over by the Revere, as their tire department, Mr. White continued as their manager.



FRANK NEWTON WHITE.

Later he promoted the Atlantic Rubber Shoe Co. During late years he spent most of his time in England, where he was instrumental in placing tire and tube making machinery invented by Henry J. Doughty, with such companies as the Dunlop Pneumatic Tyre Co. Mr. White was a natural promoter, optimistic, of good address, with a firm belief in any project that he was backing, and with a natural faculty for presenting its claims. He was New Hampshire born, and about 60 years of age at the time of his death.



PNEUMATIC TIRE SHOE MANUFACTURING MACHINE.
[Patented by W. C. State, assignor to F. A. Seiberling.]

TIRE-MAKING BY MACHINERY.

A GREAT many different machines have been designed to manufacture automobile tires or to assist in their manufacture. Perhaps the most ambitious attempt is that of the Goodyear Tire and Rubber Co. (Akron, Ohio), who have installed a battery of machines in their making up department. Each machine is mounted on heavy castings, and is designed for two workmen. It is circular in form, the tire core being held by two chucks in front of the worker. Above are racks with revolving holders for the frictioned duck, two for each tire builder.

The fabric cut, as usual, on the bias, is rolled on the holder with a sheet of muslin intervening to prevent sticking. It is arranged so that in the different plies the direction of the threads alternate, giving strength. In use the frictioned stock is led down upon the core which has been covered with cement, the muslin automatically being taken up by another roll. The fabric running under an idler to give it tension is rolled slowly about the core, the speed being about 6 revolutions a minute.

When one revolution is finished the fabric is cut, then a high speed clutch is thrown in and the core revolved about 270 revolutions a minute. Two spinning rolls, spring pressed, disc shaped, and rounded on the edges, are then brought to bear on the

tread and gradually work down on the sides until the fabric is rolled tightly against the form. Trimming is done by cutter rolls. The machine is adjustable for different sized tires, and both straight or clincher tires can be made upon it. One man by using this machine can finish ten times more tires, in a day than he could by hand work.

AUTOMOBILE AND TIRE NOTES.

VANDERBILT CUP RACE.

THE sixth Vanderbilt Cup race—the most important automobiling event in America—occurred on the Long Island course near New York, on October 1, in the presence of more people than had witnessed this contest in any preceding year. More cars were entered, faster time was made, and there was better racing, in the opinion of experts, than in the preceding contests for this cup. The winner was Harry F. Grant, with R. Vernon, mechanic, in a 6-60 "Alco" car. The distance, 278.08 miles, was covered in 255 minutes 58 seconds, or an average of 65.18 miles an hour. Of the 29 entrants, 10 covered the course and four were running at the finish. Grant was the winner also in last year's race, when he drove an "Alco" car. He was born in Boston 33 years ago. For the fifth year in succession the winning car was equipped with Michelin tires. The grand prize contest for the \$5,000 gold challenge cup of the Automobile Club of America, scheduled for the Vanderbilt Cup course for October 15, was postponed, doubtless on account of the unfortunate and unusual number of accidents, which occurred on the day of the cup race. Arrangements have been made for this contest in another State.

Six years ago, when the first Vanderbilt Cup race was run, every entrant was a special racing car, designed and constructed specifically for racing purposes, and the cost of these special automobiles ranged all the way from \$20,000 to \$63,000 apiece. When the race was declared finished, there were but four of these special cars in the running, and of the four cars but one of American design and construction, and that was in a state of bad repair at the end of the race.

This year the cars run were not only of a stock type, but of American construction. The point is that the automobile has become standardized and that the makers profiting from several years' experience are putting into machines for the everyday purchaser the best that the world can produce in the present state of the industry.

The Automobile (New York) asserts. "Let there be no mistake; the sixth annual Vanderbilt race is the finishing touch to what has been a long drawn-out struggle between the classes of cars that are made on a stock basis and the character of automobile that is specially made."

In former years when Michelin tires won the honors in the Vanderbilt Cup races they were registered as of French make, but as the Michelins have an American factory now it is presumed that they did not import tires for this special occasion.

TIRE TRADE NOTES.

THE Pacific coast representatives of Ajax-Grieb Rubber Co., Messrs. Hughson & Merton, of Seattle, Washington, have moved into a new store, at Pike street and Tenth avenue, in the center of the automobile district of that thriving city.

Under the title *The Clincher*, The B. F. Goodrich Co. (Akron, Ohio) issue monthly a little magazine which is one of the most interesting trade publications devoted to tires.

The Buffalo Specialty Co. (Buffalo, New York), after having obtained a verdict against Gougar & Todd, of Denver, Colorado, in a suit alleging infringement of the patent granted to Charles E. Duryea for the tire puncture compound "Neverleak," have defeated a motion made by the Denver firm for a new trial.



MAKING TIRES BY MACHINERY.

1A View of the Goodyear Tire-Making Machine, Showing Operators on Each Side Stretching Fabric.]

News of the American Rubber Trade.

WATERPROOF GARMENT ASSOCIATION.

THE Waterproof Garment Manufacturers' Association has been organized to include only firms local to New York City, the purpose being the general promotion of trade interests and the abolition of abuses. The movement grew out of a strike among cloak and suit workers, but as it was considered that there was not enough in common between the waterproof garment manufacturers and the cloak and suit element, the latter were not admitted to the association. This is intended to be a permanent organization, and meetings are to be held monthly. The following firms compose the membership:

Acme Raincoat Co.	American Raincoat Co.
Auto Robe and Rubber Co.	Eastern Raincoat Co.
Empire Raincoat Co.	C. Kenyon Co.
Edward Krieger & Co.	Lazarus Raincoat Co.
Liberty Rubberizing Co.	National Raincoat Co.
New York Coat House.	New York Macintosh Co.
Phoenix Auto and Raincoat Co.	J. Mandelberg & Co., Ltd.
E. L. Rosenthal.	Rosenthal & Katz.
Sanborn Manufacturing Co.	United States Raincoat Co.

The officers are W. A. Walker, president; George Kenyon, treasurer; Charles A. Place, vice-president, and Charles S. Horovitz, secretary. The headquarters are at No. 42 West Eighth street, New York.

TIRE TRADE IN COLORADO.

THE Boss Rubber Co., No. 1614 Broadway, Denver, Colo., founded about the middle of 1908, by John G. Boss, a native of Akron, Ohio, where he acquired a thorough knowledge of the tire manufacture, has grown to very important dimensions. They are devoted exclusively to the tire trade, being distributors of the "Continental" tires and demountable rims for Colorado, Wyoming, and New Mexico, and handling a full line of

tire accessories. They are referred to as operating the largest vulcanizing plant west of Akron, employing ten men constantly in their repair department. Mr. Boss is president of the company, and S. Z. Silversparre, secretary-treasurer.

NEW INCORPORATIONS.

SOUTHLAND Rubber Co., September 7, 1910, under the laws of Washington; capital \$50,000. Incorporators: J. W. Oakes, E. B. Bird, Harry S. Martin, George K. McDowell, James W. Booth, J. B. Rogers, and Charles E. Brown—all of Spokane, Washington. To cultivate 1,000 acres in rubber in the State of Chiapas, Mexico. Officers: George K. McDowell, M. D. president; J. W. Oakes, vice president; James W. Booth, treasurer; Charles E. Brown, secretary and manager; B. A. Johnson, assistant secretary. Office: 219 Paulsen building, Spokane, Washington.

Hardman Tire and Rubber Co., October 19, 1910, under the laws of New Jersey; authorized capital \$100,000. Incorporators: James Hardman, J. Harry Hardman—both of Belleville, N. J.—and William A. Sweet, Newark, N. J.

Standard Rubber and Cable Co., September 7, 1910, under the laws of Connecticut; authorized capital \$50,000. Incorporators: William J. Burns, William M. Doucette, and Peter A. Thorp—all of Bridgeport, Conn.

General Bakelite Co., September 29, 1910, under the laws of New York; capital \$800,000. Incorporators: Leo H. Baekeland, Yonkers, N. Y.; Jacob Hasslacher and Hugo Du Bois—both of New York.

Century Tire Co., September 22, 1910, under the laws of New Jersey; authorized capital \$125,000. Incorporators Richard P. Lydon, No. 35 Nassau street, New York; Arthur J. Albert, Hoboken, New Jersey; and John T. Dwane, No. 29 Moffatt street, Brooklyn, New York.

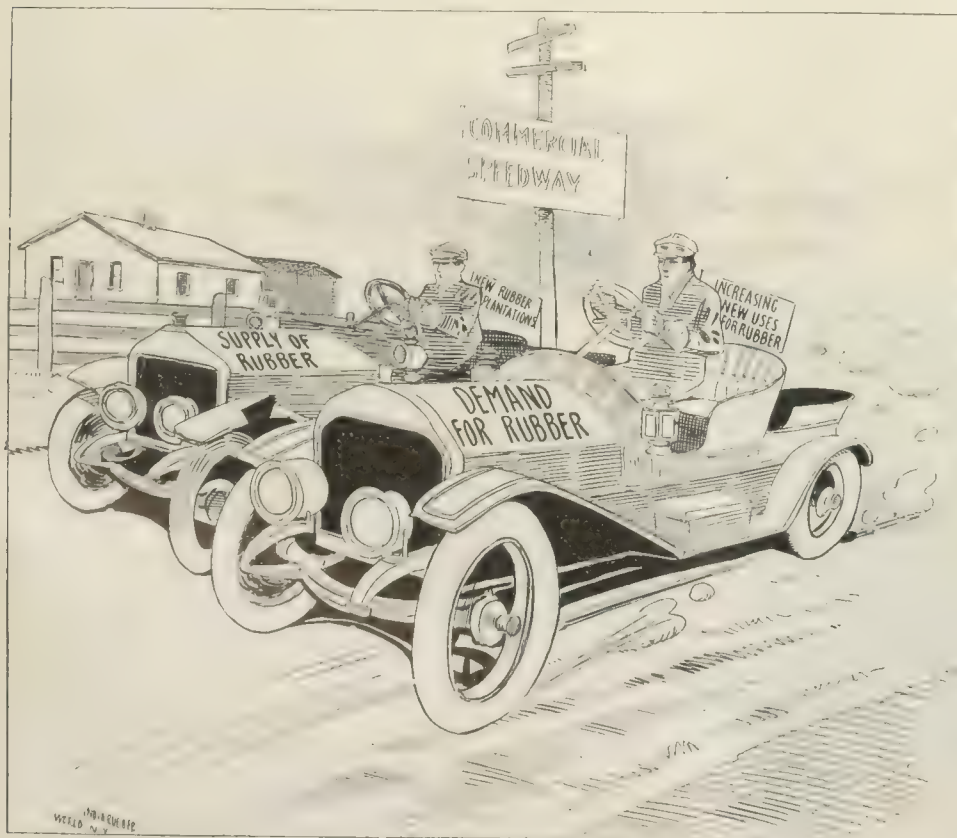
National Tire Machine Co., September 19, 1910, under the laws of New Jersey; authorized capital \$100,000. Incorporators: John Sullivan, Matthew Bowen, and Dennis Hogan—all of No. 59 Montgomery street, Jersey City, N. J.

National Tire Fabric Co., September 19, 1910, under the laws of New Jersey; authorized capital \$50,000. Incorporators: John Sullivan, Matthew Bowen, and Dennis Hogan—all of No. 59 Montgomery street, Jersey City, N. J.

Richardson Auto-Tire Protector Co., September 26, 1910, under the laws of New York; capital \$100,000. Incorporators: Jason Richardson, Ora Richardson, and Valentine Hoefner—all of Buffalo, N. Y.

Connecticut Raincoat Co., September 6, 1910, under the laws of Connecticut; authorized capital \$25,000. Incorporators: Solomon Leor, Jacob Prober, and Abraham Goldstein—all of New Haven, Conn.

Honduras Mahogany and Rubber Co., July 27, 1910, under the laws of New York; capital \$50,000. Incorporators: Herbert H. B. Holland, The Ansonia Hotel; Edward D. Smith, No. 68 West Sixty-eighth



THE RUBBER PRICE PROBLEM.

street; and Holmes S. Smith, No. 228 West One hundred and eighth street all of New York.

Brazilian Timber, Rubber and Mineral Co., September 30, 1910, under the laws of Delaware; authorized capital \$5,000,000. Incorporators: James M. Satterfield, Dover, Delaware; Porter Steele and Godfrey Goldmark—both of New York.

Superior Rubber and Manufacturing Co., June 23, 1910, under the laws of Ohio; capital \$10,000. Incorporators: J. M. Hyatt, E. S. Besaw, R. E. Nicol, A. B. McAllister, and W. J. Hollenstein. Location: Akron, Ohio.

Portage Rubber Co., February 17, 1910, under the laws of Ohio; authorized capital \$10,000. Incorporators: G. H. Doolittle, F. D. Cassidy, M. E. Habicht, F. E. Miller, and J. W. Snyder. Other details regarding this company have appeared in THE INDIA RUBBER WORLD at various times.

The Amazonia Rubber Exchange, Inc., August 31, 1910, by the State Corporation Commission of Virginia; maximum capital, \$100,000. To deal in lands in South America and to cultivate or produce rubber and other commodities. President, J. Orton Kerbey, late United States consul at Pará; Vice President and Treasurer, A. Franklin Campbell, Ontario, Canada; Secretary, John A. Emslie, with Chesapeake and Ohio Coal and Coke Co. Executive offices: 407 Munsey building, Washington, D. C.

UNITED STATES RUBBER CO.'S ISSUES.

TRANSACTIONS on the New York Stock Exchange for four weeks, ending October 22:

COMMON STOCK, \$25,000,000.

[The treasury of a subsidiary company holds \$1,344,000.]

Last Dividend, April 30, 1910—1¢.

Week	October 1	Sales 4,100 shares	High 36½	Low 34
Week	October 8	Sales 2,520 shares	High 37	Low 35¾
Week	October 15	Sales 8,700 shares	High 38¾	Low 36¼
Week	October 22	Sales 4,600 shares	High 38¾	Low 37½

For the year—High, 32½, Jan. 3; Low, 27, July 26.
Last year—High, 57½; Low, 27.

FIRST PREFERRED STOCK, \$30,824,400.

Last Dividend, October 31, 1910—2¢.

Week	October 1	Sales 545 shares	High 100	Low 107¾
Week	October 8	Sales 1,200 shares	High 109¾	Low 109
Week	October 15	Sales 1,200 shares	High 112½	Low 109½
Week	October 22	Sales 460 shares	High 112½	Low 111

For the year—High, 110½, Jan. 10; Low, 99, July 26.
Last year—High, 123½; Low, 98.

SECOND PREFERRED STOCK, \$9,965,000.

Last Dividend, October 31, 1910—1½¢.

Week	October 1	Sales 200 shares	High 71	Low 70
Week	October 8	Sales 100 shares	High 71	Low 71
Week	October 15	Sales 800 shares	High 75	Low 74
Week	October 22	Sales 430 shares	High 75½	Low 75

For the year—High, 84, Jan. 3; Low, 59½, July 27.
Last year—High, 80½; Low, 67½.

SIX PER CENT. TRUST GOLD BONDS, \$19,500,000.

Week	October 1	Sales 66 bonds	High 103½	Low 102¾
Week	October 8	Sales 37 bonds	High 103	Low 102¾
Week	October 15	Sales 66 bonds	High 103	Low 102¾
Week	October 22	Sales 79 bonds	High 103	Low 102½

For the year—High, 104½, Jan. 15; Low, 101½, July 30.
Last year—High, 106; Low, 102¼.

AMERICAN CONGO CO. ELECTION.

THE annual meeting of shareholders of the American Congo Co., for the election of directors and for other purposes, called to be held on October 19, at the offices of the company, No. 111 Broadway, New York, was adjourned to Wednesday, November 9. No business of any kind was transacted on October 19.

ESSEX RUBBER CO.'S REPRESENTATIVES.

ESSEX Rubber Co. have removed their New York offices to nicely appointed quarters in the new Rogers Peet building, Room 711, No. 258 Broadway. This office is in charge of Mr. S. Y. L'Hommiedieu, New York sales agent of the company. The New England business of the company is handled through their Boston office at No. 58 Lincoln street, in charge of Mr. W. F.

Bainbridge, their New England representative, who, in conjunction with Farnsworth, Hoyt & Co., has so ably cared for the Essex Rubber Co.'s interests during the past three years.

THE GENERAL BAKELITE CO.

THIS company, the incorporation of which is noted in another column, has been formed to work the Bakelite patents of Dr. L. H. Baekeland, of Yonkers, New York. Dr. Baekeland is president of the new company; Jacob Hasslacher vice-president and treasurer, and Hugo Dubois secretary. The other directors are Dr. Hans Foersterling, S. T. Peters and R. H. Williams. Herbert S. May is manager of the company. Works are being equipped in Perth Amboy, New Jersey, for supplying to the trade raw Bakelite in its different forms. Thus far Bakelite has been used mainly for electrical purposes, but from now on other applications will be taken in hand. Molded Bakelite articles are now being manufactured in the United States by—

Boonton Rubber Co., Boonton, New Jersey.

Dickinson Manufacturing Co., Springfield, Massachusetts.

Protal Co., No. 442 Myrtle avenue, Bridgeport, Connecticut.

Owasa Co., Elizabeth, New Jersey.

Dr. Baekeland sold his Bakelite patents for Europe to the Bakelite Gesellschaft m. b. H., of Berlin. The Resinit interests, who, in Germany, have lately brought out a product which has some analogy with Bakelite, have purchased an interest in the Bakelite Gesellschaft, and have transferred all their patents to the Bakelite Gesellschaft and will discontinue the manufacture of their own product, which will be taken up by the Bakelite Gesellschaft. The interests connected with the Bakelite Gesellschaft in Europe control, practically, the market of phenols, while the interests connected with the General Bakelite Co. are the largest producers of formaldehyde. In this way very close connection exists between the suppliers of the raw material and the Bakelite enterprises.

HARDMAN TIRE AND RUBBER CO.

THIS company, the incorporation of which is reported in another column, has been formed to acquire the real estate and machinery used in the business carried on formerly by The Riverside Rubber Co. and James Hardman, at Belleville, New Jersey, and to manufacture automobile tires. Later it is intended to add the manufacture of hard rubber goods and druggists' sundries. The officers of the company are F. Monroe Dyer, president; James Hardman, vice-president; J. Harry Hardman, secretary, and William A. Sweet, treasurer.

TRADE NEWS NOTES.

THE Eureka Fire Hose Manufacturing Co. (New York) are adding to their already extensive plant at Jersey City, New Jersey, a two-story brick concrete stable, 50x65 feet, which is intended to be turned later into a garage for trucks. They are erecting also a two-story carpenter shop, 75x100 feet, both being built of brick.

Mr. H. B. Harmer, lately with The Diamond Rubber Co., has been appointed manager of the Chicago branch of The G & J Tire Co., succeeding Mr. F. F. Tropley, resigned.

Mr. Charles Muehlstein, of The Loewenthal Co., the recently reorganized large scrap rubber business, sailed for London, early in the month, to open a branch to take care of their large European trade.

Mr. M. P. Fillingham, consulting and contracting engineer to the rubber trade (No. 50 Church street, New York), has made connections with the Birmingham Iron Foundry, manufacturers of rubber mill machinery, to represent them in New York territory, in addition to his regular business.

Canada, though importing automobiles, is also exporting some of her own manufacture. During the fiscal year 346 were exported, of the average value of \$1,171, of which 167 went to Australia.

NEW HARDWARE DISTRIBUTING SYSTEM.

THE manufacturers of rubber goods whose products are distributed so widely through the hardware trade cannot fail to be interested in the coöperative buying project which is being organized under the name of American Hardware and Supply Co. The purpose is to distribute goods to retail hardware merchants, in various States, who affiliate themselves with the company as shareholders. Its operations will be on similar lines to those followed by the Philadelphia Hardware Merchants' Association, which has a membership of 33 houses, but on a much larger scale.

The new movement is under the leadership of Mr. M. R. Porter, who has had an extensive experience in the wholesale hardware trade, and the present headquarters are in the Oliver building, in Pittsburg, in which city the first distributing warehouse will be organized. It is expected that the company will be in active operation by January 1, 1911.

The new movement has received support from leading hardware journals, in view of what are regarded as growing difficulties in the retail hardware trade. As a prominent retailer writes: "There must be a revolution in the system of distributing goods." *Iron Age-Hardware* remarks: "Perhaps the jobbers will find some solution consistent with their continuance as the channel for the supply of the retail trade, even though this may require a modification of their methods and a material reducing of the expenses under which they are now conducting business."

STEAM PACKINGS AT THE TRENTON FAIR.

THE Home Rubber Co. were exhibitors at the recent Interstate Fair at Trenton, New Jersey, making a specialty of their "N B O" and "O I M" packings, which attracted much favorable comment. The printed matter with these goods was distinctly original and attractive. One folder was embellished with a view of Vesuvius in eruption, with the suggestion that "If Mt. Vesuvius had been packed with N B O it would never have blown out."

RUBBER MEN PLAY BALL.

Two interesting games of baseball were played during the past month by two teams from different departments of the general offices of the United States Rubber Co. in Prospect Park, Brooklyn—from the Auditor's and Selling departments. In the game on October 1 the Auditors won by a score of 18 to 10. In the game on October 8 the Selling department won by a score of 8 to 1.

PERSONAL MENTION.

AN interesting incident in the proceedings of Altair Lodge, F. and A. M., Brooklyn, N. Y., on the evening of October 18, was the affiliation of Mr. Robert B. Baird, of the Rubber Trading Co. (New York), and the working of the third degree upon Mr. Robert L. Baird, his son.

The Editor of THE INDIA RUBBER WORLD is to give an illustrated lecture on the rubber country of the Amazon at a meeting of the American Chemical Society to be held at the Chemists' Club, No. 108 West Fifty-fifth street, New York, on the evening of November 11.

Lieutenant Francis H. Appleton (of F. H. Appleton & Son, Boston) is one of a committee of three who have gone to London in behalf of the Ancient and Honorable Artillery Company of Boston, to present to King George V a certificate of honorary membership in their organization.

Mr. Quincy Tucker, whose interest in rubber THE INDIA RUBBER WORLD has chronicled from time to time, is at present in British Guiana. He writes THE INDIA RUBBER WORLD that he has acquired for himself and others rubber properties in Demerara and Trinidad.

Mr. William J. Kelley, Jr., son of "the only Kelley," of the firm of Poel & Arnold, New York, has returned to Germany for his second year in the University of Leipzig, where he is specializing on the chemistry of india-rubber.

Mr. Edward E. Huber of the firm of Eberhard Faber, at the recent fifteenth annual meeting of the New York Credit Men's Association, was reelected secretary of that organization. Mr. Huber has also filled, for a number of years, the office of secretary of the Rubber Sundries Manufacturers' Association.

Recent visitors to New York were Herr Seligman, a son of Director Siegmund Seligman, of Continental-Caoutchouc- und Guttapercha Cie., of Hanover, Germany, and Dr. Albert Gerlach, a director in the same company.

The Century Rubber Trading Co., incorporated March 9, 1910, are operating the factory at Plainfield, New Jersey, used formerly by the Courtney Rubber Co. They are making the "Century" tire for automobiles. Their New York office is at No. 123 West Sixty-eighth street.

Mr. Ernest E. Buckleton, secretary and general manager of the Northwestern Rubber Co., Limited, of Litherland, Liverpool, delighted his American friends with a visit during the past month.

CRUDE RUBBER STATISTICS.

Plantation Rubber from the Far East.

EXPORTS OF CEYLON GROWN RUBBER.

[From January 1 to September 10, 1909 and 1910. Compiled by the Ceylon Chamber of Commerce.]

	1909.	1910.
To Great Britain	494,394	968,439
To United States		932,516
To Canada	276,400	1,911
To Belgium	27,036	34,217
To Germany	17,839	10,479
To Australia	8,224	1,099
To Italy	608	841
To France	1,639	....
To China	1,508	....

Total 827,648 1,949,502

[Same period 1908—530,618 pounds; same 1907—334,765.]

TOTAL EXPORTS FROM MALAYA.

[From January 1 to dates named. Reported by BARLOW & Co., Singapore. These figures include the production of the Federated Malay States, but not of Ceylon.]

	1908.	1909.	1910.
From Singapore (to Sept. 9).....	1,369,584	1,712,109	2,339,629
From Penang (to Aug. 20).....	802,583	1,619,205	1,315,426
From Pt. Swettenham (to Aug. 21) .....	....	....	5,008,521

Total 2,172,167 3,331,314 8,663,576

Antwerp.

RUBBER ARRIVALS FROM THE CONGO.

SEPTEMBER 23.—By the steamer *Albertville*:

Bunge & Co.....(Société Générale Africaine) kilos	113,800
Do	9,900
Do	19,400
Do	78,200
Société Coloniale Anversoise.....(Sud Cameroen)	7,700
Société Equatoriale Congolaise.....	1,190
Charles Dethier.....(American Congo Co.)	2,250
L. & W. Van de Velde.....	3,000
Congo Trading Co.....	200
Total	235,640

OCTOBER 12.—By the steamer *Leopoldville*:

Bunge & Co.....(Société Générale Africaine) kilos	68,000
Do	7,300
Do	19,700
Do	700
Société Equatoriale Congolaise.....	10,000
Société Coloniale Anversoise.....(Sud Cameroen)	85,600
Do	700
Cassart & Hemion	192,000

African Rubbers.

NEW YORK STOCKS (IN TONS).

September 1, 1909.....	123	April 1, 1910.....	121
October 1	67	May 1	125
November 1	134	June 1	90
December 1	134	July 1	120
January 1, 1910.....	228	August 1	250
February 1	134	September 1	300
March 1	161	October 1	375

Review of the Crude Rubber Market.

PRICES quoted for all grades of rubber listed on this page have declined materially since our last report, but it is to be noted that all quotations are referred to in the trade as nominal, and that anything like fixed conditions do not exist in the trade. It is asserted that there is no buying on a large scale, manufacturers being disposed, as far as possible, to remain out of the market. In the London market the decline in rubber is attributed to lack of buying orders in America, while on this side of the Atlantic the condition is charged to manipulation in England.

NEW YORK QUOTATIONS.

Following are the quotations at New York for Pará grades, one year ago, one month ago, and October 28—the current date:

PARÁ.	Nov. 1, '09.	Oct. 1, '10.	Oct. 28.
Islands, fine, new.....	185@187	155@156	121@122
Islands, fine, old.....	none here	none here	none here
Upriver, fine, new.....	203@204	165@166	140@141
Upriver, fine, old.....	none here	160@170	142@143
Islands, coarse, new.....	71@72	90@91	73@74
Islands, coarse, old.....	none here	none here	none here
Upriver, coarse, new.....	@124	122@123	102@103
Upriver, coarse, old.....	none here	none here	none here
Cametá.....	84@...	90@91	75@76
Caucho (Peruvian), ball.....	115@...	110@120	100@101
Caucho (Peruvian), sheet.....	@88	none here	none here

PLANTATION PARÁ.

Fine smoked sheet.....	none here	159@160	141@142
Fine pale crepe.....	@220	145@146	140@141
Fine sheets and biscuits.....	@...	142@143	138@139

CENTRALS.

Esmeralda, sausage.....	97@98	103@104	91@92
Guayaquil, strip.....	85@86	none here	none here
Nicaragua, scrap.....	95@96	100@101	90@91
Panama.....	84@85	none here	none here
Mexican, scrap.....	97@98	100@101	90@91
Mexican, slab.....	84@85	66@67	60@61
Mangabeira, sheet.....	82@83	80@81	75@76
Guayule.....	50@51	74@75	65@66
Balata, sheet.....	@...	@...	@80
Balata, block.....	@...	@...	@56

AFRICAN.

Lopori, ball, prime.....	@135	130@131	124@125
Lopori, strip, prime.....	none here	125@126	118@119
Aruwimi.....	121@122	122@123	110@111
Upper Congo, ball, red.....	129@130	120@121	110@111
Ikelemba.....	none here	none here	none here
Sierra Leone, 1st quality.....	122@123	145@146	119@120
Massai, red.....	@124	145@146	119@120
Soudan niggers.....	@109	115@116	108@109
Cameroon, ball.....	80@90	73@74	66@67
Benguela.....	81@82	98@99	88@89
Madagascar, pinky.....	@102	none here	none here
Accra flake.....	23@...	none here	46@47

EAST INDIAN.

Assam.....	none here	none here	none here
Pontianak.....	@514	512@514	518@514
Borneo.....	52@53	none here	none here

Late Pará cables quote:

	Per Kilo.		Per Kilo.
Islands, fine.....	\$4900	Upriver, fine.....	\$6800
Islands, coarse.....	\$2800	Upriver, coarse.....	\$4800
		Exchange.....	17 1/2 d.

Latest Manáos advices:

Upriver, fine.....	\$6800	Upriver, coarse.....	\$3800
		Exchange.....	17-9/16 d.

NEW YORK PRICES FOR SEPTEMBER (NEW RUBBER).

	1910.	1909.	1908.
Upriver, fine.....	\$1.55@1.90	\$1.90@2.15	\$0.96@1.03
Upriver, coarse.....	1.22@1.42	1.12@1.32	.69@.73
Islands, fine.....	1.50@1.82	1.72@2.02	.90@.96
Islands, coarse.....	.90@.92	.65@.82	.44@.48
Cametá.....	.90@.98	.83@.96	.51@.53

Statistics of Para Rubber (Excluding Caucho).

	NEW YORK.			PARÁ.			ENGLAND.		
	Fine and Medium.	Coarse		1910.	1909.	1908.	1910.	1909.	1908.
Stocks, August 31.....	146	25		171	156	129			
Arrivals, September.....	504	426	=	930	1157	1166			
Aggregating.....	650	451		1101	1313	1205			
Deliveries, September.....	509	417	=	926	1171	1216			
Stocks, September 30.....	141	34	=	175	142	79			
Stocks, August 31.....	585	910	305	1275	295	375			
Arrivals, September.....	1870	2020	2100	1000	855	710			
Aggregating.....	2455	2930	2405	2275	1150	1085			
Deliveries, September.....	1595	2175	1965	697	825	800			
Stocks, September 30.....	800	755	440	1578	325	285			
World's visible supply, September 30.....				3,350	1,637	1,831			
Pará receipts, July 1 to September 30.....				4,830	4,720	4,870			
Pará receipts of caucho, same dates.....				1,430	820	840			
Afloat from Pará to United States, Sept. 30.....				347	none	1,060			
Afloat from Pará to Europe, September 30.....				390	415	920			

London.

OCTOBER 14.—Lewis & Peat report: Since our last we have had violent fluctuations in the price of fine hard, a considerable business being done early in the week at 6s. up to 7s. 1d., and later down again to 6s. 2d., closing at 6s. 1d., sellers. Next auctions, October 18.

Rubber Scrap Prices.

LATE New York quotations—prices paid by consumers for car-load lots, per pound—are slightly lower, as follows:

	October 1.	November 1.
Old rubber boots and shoes—domestic.....	10 1/4 @ 10 3/8	9 7/8 @ 10
Old rubber boots and shoes—foreign.....	9 3/4 @ 9 7/8	9 3/8 @ 9 3/4
Pneumatic bicycle tires.....	6 3/4 @ 7	6 3/4 @ 7
Automobile tires.....	8 3/4 @ 9	8 @ 8 1/8
Solid rubber wagon and carriage tires.....	9 1/2 @ 9 3/4	9 1/4 @ 9 1/2
White trimmed rubber.....	12 @ 12 1/2	12 @ 12 1/2
Heavy black rubber.....	6 1/4 @ 6 1/2	6 1/4 @ 6 1/2
Air brake hose.....	5 1/4 @ 5 3/8	5 1/4 @ 5 3/8
Garden hose.....	2 1/4 @ 2 1/2	2 1/4 @ 2 1/2
Fire and large hose.....	2 7/8 @ 3	2 7/8 @ 3
Matting.....	1 1/8 @ 1 1/4	1 1/8 @ 1 1/4

IMPORTS FROM PARÁ AT NEW YORK.

[The Figures Indicate Weight in Pounds.]

OCTOBER 1.—By the steamer *Rio de Janeiro*, from Pará:

	Fine.	Medium.	Coarse.	Caucho.	Total
A. T. Morse & Co.....	100,500	2,000	77,100		179,600
Henderson & Korn.....	23,200		13,800		37,000
L. Johnson & Co.....	25,300		10,600		35,900
H. A. Astlett & Co.....			6,600		6,600
Total.....	149,000	2,000	108,100		259,100

OCTOBER 5.—By the steamer *Bonifaz*, from Manáos and Pará:

A. T. Morse & Co.....	144,500	25,800	81,000	400	251,700
New York Commercial Co.....	60,000	19,000	19,000	2,000	100,000
Piel & Arnold.....	30,700	18,300	31,400		80,400
Hagemeyer & Brunn.....	16,400				16,400
Henderson & Korn.....	14,300				14,300
William E. Peck & Co.....	1,100		4,800		5,900
Total.....	267,000	63,100	135,700	2,400	468,200

OCTOBER 15.—By the steamer *Dunstan*, from Manáos and Pará:

A. T. Morse & Co.....	204,800	17,500	69,500	6,100	297,900
Piel & Arnold.....	68,200	16,100	30,000	400	114,700
New York Commercial Co.....	40,700	8,600	18,200	11,200	78,700
Henderson & Korn.....	45,000				45,000
Hagemeyer & Brunn.....	10,300				10,300
William E. Peck & Co.....	1,800		4,600		6,400
Total.....	370,800	42,200	122,300	17,700	553,000

OCTOBER 24.—By the steamer *Clement*, from Manáos and Pará:

A. T. Morse & Co. (Coarse).....	35,000	111,000	15,000	39,000	Henderson & Korn.....	83,500	34,000	117,000
Poel & Arnold (Fine).....	35,000	144,000	15,000	39,000	J. Johnson & Co.....	50,000	7,500	77,500
New York Commercial Co. (Coarse).....	35,000	20,500	28,000	62,400	Total.....	750,000	186,800	251,400

PARA RUBBER VIA EUROPE.

SEPT. 20. By the <i>Mermaid</i> —Liverpool:		
Poel & Arnold (Fine).....	4,000	
A. T. Morse & Co. (Coarse).....	50,500	
SEPT. 28. By the <i>Carmania</i> —Liverpool:		
Poel & Arnold (Coarse).....	34,000	
General Rubber Co. (Coarse).....	11,500	
N. Y. Commercial Co. (Coarse).....	68,500	
SEPT. 26. By the <i>Albatross</i> —M. London:		
General Rubber Co. (Coarse).....	11,500	
N. Y. Commercial Co. (Fine).....	15,000	
Oct. 1. By the <i>Compania</i> —Liverpool:		
N. Y. Commercial Co. (Coarse).....	34,000	
A. T. Morse & Co. (Coarse).....	45,000	
Oct. 3. By the <i>Cuba</i> —Liverpool:		
Raw Products Co. (Coarse).....	10,000	
Oct. 10. By the <i>Cuba</i> —Liverpool:		
N. Y. Commercial Co. (Fine).....	45,000	
Poel & Arnold (Fine).....	33,500	
A. T. Morse & Co. (Coarse).....	11,500	
Raw Products Co. (Coarse).....	7,000	97,000
Oct. 10. By the <i>Albatross</i> —M. London:		
General Rubber Co. (Coarse).....	7,000	
Oct. 13.—By the <i>Carmania</i> —Liverpool:		
Robinson & Co. (Fine).....	22,000	
Poel & Arnold (Coarse).....	10,000	
Poel & Arnold (Coarse).....	28,500	
Oct. 15.—By the <i>President</i> —Hamburg:		
W. L. Gough Co. (Fine).....	15,000	
N. Y. Commercial Co. (Fine).....	2,500	12,500
Oct. 17. By the <i>Arabia</i> —Liverpool:		
N. Y. Commercial Co. (Fine).....	45,000	
Poel & Arnold (Fine).....	7,500	50,500
Oct. 22.—By the <i>Compania</i> —Liverpool:		
Poel & Arnold (Coarse).....	50,000	
A. T. Morse & Co. (Coarse).....	34,500	
N. Y. Commercial Co. (Coarse).....	11,000	94,500

OTHER NEW YORK ARRIVALS.

CENTRALS.

[*This sign, in connection with imports of Centrals, denotes Guayule rubber.]

		POUNDS.
SEPT. 23.—By the <i>El Cid</i> —Galveston:		
Charles T. Wilson.....	*7,000	
SEPT. 23.—By the <i>Origen</i> —Honduras:		
A. Rosenthal & Sons.....	3,000	
George A. Alden & Co.....	1,000	4,000
SEPT. 23.—By the <i>Matanzas</i> —Tampico:		
Ed Maurer.....	*67,000	
SEPT. 24.—By the <i>Montevideo</i> —Frontera:		
Harburger & Stack.....	4,500	
H. Marquardt & Co.....	2,500	
E. Steiger & Co.....	2,000	9,000
SEPT. 26.—By the <i>Vaderland</i> —Antwerp:		
Robert Badenhop.....	5,500	
SEPT. 26.—By the <i>Allemania</i> —Colombia:		
Lionel Hagenhaers & Co.....	3,000	
R. Del Castillo & Co.....	3,000	
Suzarte & Whitney.....	1,500	
Isaac Brandon & Bros.....	1,500	
Gillespie Bros. & Co.....	1,000	10,000
SEPT. 26.—By the <i>El Dorado</i> —Galveston:		
Continental-Mexican Rubber Co.....	*86,000	
SEPT. 27.—By the <i>Merida</i> —Vera Cruz:		
H. Marquardt & Co.....	5,000	
International Products Co.....	1,000	
American Trading Co.....	1,000	7,000
SEPT. 28.—By the <i>Allianca</i> —Colon:		
G. Amsinck & Co.....	6,500	
Isaac Brandon & Bros.....	5,000	
Mecke & Co.....	3,000	
J. Sambrada Co.....	2,500	
Wessels, Kulenkampff & Co.....	2,500	
Maldonado & Co.....	2,000	
Pablo Calvet & Co.....	2,000	
Dumarest Bros. & Co.....	1,500	
West Coast Rubber Co.....	1,000	
Gillespie Bros. & Co.....	1,000	27,000
SEPT. 29.—By the <i>Atrato</i> —Colombia:		
A. M. Capen's Sons.....	8,000	
W. R. Grace & Co.....	5,500	
J. Sambrada Co.....	3,500	

Maitland, Coppell & Co.....	3,500	
Kunhardt & Co.....	2,000	
C. B. & B. Blanco.....	2,000	
Gravenhorst & Co.....	1,500	
G. Amsinck & Co.....	1,000	
H. Schutte, Giesken & Co.....	1,000	28,000
Oct. 1. By the <i>El Norte</i> —Galveston:		
Continental-Mexican Rubber Co.*150,000		
E. S. Churchill.....	*17,000	*167,000
Oct. 1. By the <i>Rio de Janeiro</i> —Maceio:		
A. D. Hitch & Co.....	7,000	
Oct. 1.—By the <i>Allemania</i> —Colombia:		
Maitland, Coppell & Co.....	1,300	
Pablo Calvet & Co.....	2,500	
Agostini & Martinez.....	2,500	
A. Held.....	1,000	10,000
Oct. 2. By the <i>Finghiana</i> —Tampico:		
N. Y. Commercial Co.....	*135,000	
Ed. Maurer.....	*50,000	
Poel & Arnold.....	*40,000	*225,000
Oct. 3. By the <i>Gracia</i> —New Orleans:		
Robinson & Co.....	2,500	
A. N. Rotholz.....	2,000	
G. Amsinck & Co.....	2,000	6,500
Oct. 4.—By the <i>Tenda</i> —Bahia:		
J. H. Rossbach & Bros.....	45,000	
A. Hirsch & Co.....	32,000	78,000
Oct. 5.—By the <i>Alba</i> —Galveston:		
Continental-Mexican Rubber Co.....	*150,000	
Oct. 5.—By the <i>Colon</i> —Colon:		
G. Amsinck & Co.....	12,500	
L. Johnson & Co.....	6,500	
J. Sambrada Co.....	5,000	
George A. Alden & Co.....	2,500	
Tempest Bros. & Co.....	2,000	
H. Marquardt & Co.....	1,500	30,000
Oct. 6.—By the <i>El Mar</i> —Galveston:		
Continental-Mexican Rubber Co.....	*75,000	
Oct. 6. By the <i>Prinz Joachim</i> —Colon:		
G. Amsinck & Co.....	5,500	
Pablo Calvet & Co.....	2,000	
Iglesias, Lobo Co.....	1,500	
A. Held.....	1,500	
Suzarte & Whitney.....	1,000	
A. Rosenthal & Sons.....	1,000	
New York Commercial Co.....	1,000	
Isaac Brandon & Bros.....	1,000	14,500
Oct. 6.—By the <i>Bluecher</i> —Hamburg:		
Ed. Maurer.....	*27,000	
Oct. 8.—By the <i>Esperanza</i> —Vera Cruz:		
Harburger & Stack.....	2,000	
Chilean Export Co.....	2,000	
Scholz & Marturet.....	1,000	
E. N. Tibbals & Co.....	1,000	
T. W. Wilson & Co.....	1,000	
E. Steiger & Co.....	1,000	8,000
Oct. 10.—By the <i>Bayamo</i> —Tampico:		
Ed. Maurer.....	*85,000	
New York Commercial Co.....	*34,000	*119,000
Oct. 11.—By the <i>Albenga</i> —Colombia:		
G. Amsinck & Co.....	6,000	
Kunhardt & Co.....	3,500	
A. Javanillo Co.....	3,000	
Gravenhorst & Co.....	2,000	
Lionel Hagenhaers & Co.....	1,000	15,500
Oct. 11.—By the <i>El Monte</i> —Galveston:		
Continental-Mexican Rubber Co.....	*85,000	
Oct. 11.—By the <i>Momus</i> —New Orleans:		
A. T. Morse & Co.....	2,500	
A. N. Rotholz.....	2,500	5,000
Oct. 13.—By the <i>Carmania</i> —Liverpool:		
Poel & Arnold.....	15,000	
Oct. 13.—By the <i>Adriana</i> —Colon:		
Isaac Brandon & Bros.....	9,500	
Harst Brothers.....	4,000	
G. Amsinck & Co.....	3,500	
Suzarte & Whitney.....	2,500	
L. Johnson & Co.....	2,000	
R. Del Gallego & Co.....	1,000	22,500
Oct. 13.—By the <i>El Siglo</i> —Galveston:		
Continental-Mexican Rubber Co.....	*110,000	
Oct. 14.—By the <i>Mexico</i> —Frontera:		
E. Steiger & Co.....	5,000	
Harburger & Stack.....	2,000	

Maldonado & Co.....	1,000	
Oct. 15. By the <i>El Cid</i> —Galveston:		
Continental-Mexican Rubber Co.....	*70,000	
Oct. 15.—By the <i>Dunstan</i> —Ceara:		
G. Amsinck & Co.....	47,000	
J. H. Rossbach & Bros.....	2,000	67,000
Oct. 17. By the <i>Segurana</i> —Tampico:		
Ed. Maurer.....	*80,000	
New York Commercial Co.....	*34,000	
For Hamburg.....	6,000	*120,000
Oct. 17.—By the <i>American</i> —Mexico:		
George A. Alden & Co.....	11,500	
Oct. 17.—By the <i>Panama</i> —Colon:		
G. Amsinck & Co.....	23,000	
Isaac Brandon & Bros.....	9,000	
Mecke & Co.....	2,000	
Dumarest Bros. & Co.....	2,000	
R. G. Barthold.....	1,500	38,000
Oct. 18. By the <i>El Paso</i> —Galveston:		
Continental-Mexican Rubber Co.*75,000		
Charles T. Wilson.....	*80,000	
Oct. 18.—By the <i>Alba</i> —Colon:		
Maitland, Coppell & Co.....	7,000	
De Sola Bros. & Pardo.....	3,500	
Lionel Hagenhaers & Co.....	1,500	
Caballero & Blanco.....	1,500	13,500
Oct. 18. By the <i>Asiatic</i> —Bahia:		
J. H. Rossbach & Bros.....	35,000	
Oct. 19. By the <i>Prinz</i> —Colon:		
A. Santos & Co.....	13,500	
A. Held.....	2,500	
Isaac Brandon & Bros.....	2,000	
Delima Cortissoz & Co.....	1,000	
Gillespie Bros. & Co.....	1,000	19,500
Oct. 21.—By the <i>Crete</i> —New Orleans:		
A. T. Morse & Co.....	5,000	
A. N. Rotholz.....	2,500	
Robinson & Co.....	2,000	
Eggers & Heinlein.....	2,500	
New York Commercial Co.....	1,000	14,500
Oct. 22.—By the <i>Byron</i> —Bahia:		
J. H. Rossbach & Bros.....	15,000	
New York Commercial Co.....	5,000	
A. Hirsch & Co.....	1,500	21,500
Oct. 24.—By the <i>Allianca</i> —Colon:		
Piza, Nephews & Co.....	4,500	
R. Fabien & Co.....	1,500	6,000

AFRICAN.

		POUNDS.
SEPT. 19.—By the <i>Finnland</i> —Antwerp:		
Robert Badenhop.....	2,000	
SEPT. 23.—By the <i>Lustina</i> —Liverpool:		
A. T. Morse & Co.....	3,500	
George A. Alden & Co.....	2,500	6,000
SEPT. 24.—By the <i>Teutonic</i> —Liverpool:		
Robert Badenhop.....	2,000	
SEPT. 26.—By the <i>Kaisa</i> —Antwerp:		
George A. Alden & Co.....	40,000	
A. T. Morse & Co.....	22,500	
Livesey & Co.....	6,500	
Raw Products Co.....	6,000	75,000
SEPT. 26.—By the <i>Vaderland</i> —Antwerp:		
A. T. Morse & Co.....	5,500	
Robert Badenhop.....	10,800	16,300
SEPT. 28.—By the <i>Caronia</i> —Liverpool:		
General Rubber Co.....	55,000	
George A. Alden & Co.....	3,000	58,000
SEPT. 29.—By the <i>Pennsylvania</i> —Hamburg:		
George A. Alden & Co.....	45,000	
A. T. Morse & Co.....	45,000	
Poel & Arnold.....	20,000	
W. L. Gough Co.....	25,000	
Rubber Trading Co.....	9,000	
Robert Badenhop.....	7,000	151,000
Oct. 1.—By the <i>Campania</i> —Liverpool:		
General Rubber Co.....	20,000	
Oct. 3.—By the <i>Celtic</i> —Liverpool:		
George A. Alden & Co.....	25,000	
W. L. Gough Co.....	5,000	30,000

OCT. 3. By the <i>Lapland</i> Antwerp:		
Poel & Arnold.....	45,000	
Rubber Trading Co.....	25,500	
A. T. Morse & Co.....	25,000	
George A. Alden & Co.....	7,000	
Livesey & Co.....	4,500	109,000

OCT. 6. By the <i>Blucher</i> Hamburg:		
A. T. Morse & Co.....	30,000	
W. L. Gough Co.....	8,000	
George A. Alden & Co.....	6,000	
Robert Badenhop.....	4,500	48,500

OCT. 8. By the <i>Carline</i> Havre:		
A. T. Morse & Co.....	70,000	
Poel & Arnold.....	30,000	
George A. Alden & Co.....	2,500	102,500

OCT. 10. By the <i>Cedra</i> Liverpool:		
General Rubber Co.....	55,000	
W. L. Gough Co.....	15,000	
Rubber Trading Co.....	6,500	
George A. Alden & Co.....	2,500	
Livesey & Co.....	2,500	82,500

OCT. 10. By the <i>Cleveland</i> Hamburg:		
A. T. Morse & Co.....	125,000	
George A. Alden & Co.....	45,000	
Raw Products Co.....	8,000	
Robert Badenhop.....	5,500	183,500

OCT. 11. By the <i>Kronland</i> Antwerp:		
Livesey & Co.....	13,500	
Rubber Trading Co.....	14,500	25,000

OCT. 13. By the <i>St. Lambert</i> Havre:		
General Rubber Co.....	93,000	
Raw Products Co.....	3,000	96,000

OCT. 13. By the <i>President Grant</i> Hamburg:		
W. L. Gough Co.....	7,000	

OCT. 14. By the <i>Koenig Albert</i> Genoa:		
W. L. Gough Co.....	5,500	

OCT. 15. By the <i>America</i> Hamburg:		
A. T. Morse & Co.....	13,000	
Livesey & Co.....	8,000	
W. L. Gough Co.....	4,500	25,500

OCT. 17. By the <i>Arabic</i> Liverpool:		
General Rubber Co.....	56,000	
A. T. Morse & Co.....	20,000	76,000

OCT. 20. By the <i>President Grant</i> Hamburg:		
W. L. Gough Co.....	35,000	
George A. Alden & Co.....	40,000	
General Rubber Co.....	20,000	
Rubber Trading Co.....	11,500	
Robert Badenhop.....	11,000	
A. T. Morse & Co.....	11,500	
Livesey & Co.....	5,500	134,500

OCT. 22. By the <i>Campana</i> Liverpool:		
Poel & Arnold.....	25,000	
General Rubber Co.....	13,500	
George A. Alden & Co.....	4,500	
Livesey & Co.....	2,000	
Raw Products Co.....	2,500	47,500

EAST INDIAN.

[*Denotes plantation rubber.]

SEPT. 24. By the <i>Lusitania</i> Liverpool:		
Rubber Import Co.....	5,500	

SEPT. 24. By the <i>St. Louis</i> London:		
New York Commercial Co.....	*25,000	
Poel & Arnold.....	*11,000	
Malaysian Rubber Co.....	18,000	54,000

SEPT. 26. By the <i>Faderland</i> Antwerp:		
A. T. Morse & Co.....	*9,000	

SEPT. 26. By the <i>Kybfels</i> Colombo:		
A. T. Morse & Co.....	*36,000	
New York Commercial Co.....	*33,000	*69,000

SEPT. 26. By the <i>Minneapolis</i> London:		
A. T. Morse & Co.....	*33,500	
Rubber Trading Co.....	4,500	
Robinson & Co.....	11,000	49,000

SEPT. 28. By the <i>Carline</i> Liverpool:		
Livesey & Co.....	11,500	

SEPT. 28. By the <i>Oceanic</i> London:		
New York Commercial Co.....	*56,000	
Poel & Arnold.....	*14,500	*70,500

OCT. 3. By the <i>Nere York</i> London:		
A. T. Morse & Co.....	*11,000	
New York Commercial Co.....	*9,500	
Poel & Arnold.....	7,000	*27,500

OCT. 3. By the <i>Lapland</i> Antwerp:		
A. T. Morse & Co.....	*25,000	

OCT. 4. By the <i>Manneapolis</i> London:		
A. T. Morse & Co.....	*18,000	
Robinson & Co.....	15,000	
Raw Products Co.....	5,000	35,000

OCT. 6. By the <i>Pruchenfels</i> Colombo:		
New York Commercial Co.....	*60,000	
A. T. Morse & Co.....	*55,000	*115,000

OCT. 6. By the <i>Manneapolis</i> London:		
New York Commercial Co.....	*29,000	
Poel & Arnold.....	11,500	
A. T. Morse & Co.....	5,500	
Henderson & Korn.....	*4,500	*50,500

OCT. 10. By the <i>St. Paul</i> London:		
New York Commercial Co.....	*25,000	

OCT. 10. By the <i>Kronland</i> Antwerp:		
A. T. Morse & Co.....	25,000	
Robert Badenhop.....	3,500	28,500

OCT. 10. By the <i>Manneapolis</i> London:		
A. T. Morse & Co.....	*34,000	
Malaysian Rubber Co.....	35,000	
General Rubber Co.....	*11,000	
Henderson & Korn.....	7,000	
Ed. Maurer.....	*5,500	
Raw Products Co.....	*3,500	
General Rubber Co.....	22,500	118,500

OCT. 13. By the <i>Adriatic</i> London:		
New York Commercial Co.....	*10,000	
Poel & Arnold.....	*11,000	*21,000

OCT. 13. By the <i>Guinea</i> Singapore:		
Heabler & Co.....	30,000	
Poel & Arnold.....	20,000	
W. L. Gough Co.....	15,000	
Ed. Maurer.....	20,000	85,000

OCT. 13. By the <i>Katana</i> Colombo:		
New York Commercial Co.....	*30,000	
A. T. Morse & Co.....	*11,000	*41,000

OCT. 15. By the <i>Philadelphia</i> London:		
New York Commercial Co.....	*5,000	
Poel & Arnold.....	*9,000	
Henderson & Korn.....	*2,500	*16,500

OCT. 17. By the <i>Arabic</i> Liverpool:		
Rubber Import Co.....	26,000	

OCT. 19. By the <i>Mesaba</i> London:		
General Rubber Co.....	*80,000	
Ed. Maurer.....	4,500	
A. T. Morse & Co.....	*3,500	
Robinson & Co.....	45,000	133,000

OCT. 20. By the <i>Tautonic</i> London:		
New York Commercial Co.....	*25,000	
Poel & Arnold.....	4,500	*29,500

OCT. 20. By the <i>President Grant</i> Hamburg:		
George A. Alden & Co.....	33,000	

OCT. 22. By the <i>St. Louis</i> London:		
New York Commercial Co.....	*25,000	
Henderson & Korn.....	*15,000	
Henderson & Korn.....	5,000	45,000

GUTTA-PILEUS.

OCT. 13. By the <i>Guinea</i> Singapore:		
Heabler & Co.....	700,000	
W. L. Gough Co.....	45,000	
Poel & Arnold.....	15,000	
Robinson & Co.....	155,000	
Winter & Smille.....	55,000	2,885,000

GUTTA-PERCHA.

SEPT. 20. By the <i>Paris</i> Hamburg:		
Robert Soltan & Co.....	9,000	

OCT. 13. By the <i>Guinea</i> Singapore:		
W. L. Gough Co.....	45,000	
Heabler & Co.....	45,000	90,000

OCT. 17. By the <i>Hercules</i> Singapore:		
L. Littlejohn & Co.....	45,000	

OCT. 20. By the <i>President Grant</i> Hamburg:		
Robert Soltan & Co.....	9,000	

BALATA.

SEPT. 27. By the <i>Natuna</i> London:		
Ed. Maurer.....	1,000	
Middleton & Co.....	2,000	
J. A. Paul & Co.....	2,000	
George A. Alden & Co.....	2,000	7,000

OCT. 4. By the <i>Guiana</i> Demerara:		
George A. Alden & Co.....	15,500	
American Trading Co.....	2,000	
Frame & Co.....	2,000	19,500

OCT. 7. By the <i>Grenada</i> Bolivar:		
G. Amsinck & Co.....	11,000	

OCT. 13. By the <i>Manneapolis</i> London:		
Suzarte & Whitney.....	4,500	
Middleton & Co.....	2,500	7,000

OCT. 18. By the <i>Ceylon</i> London:		
J. A. Paul & Co.....	1,000	
Graham, Hinkley & Co.....	1,000	4,000
OCT. 19. By the <i>Korona</i> Demerara:		
George A. Alden & Co.....	15,000	

CUSTOM HOUSE STATISTICS.

PORT OF NEW YORK. SEPT. 1910.			
Imports:	Pounds.	Value.	
India rubber.....	5,322,773	\$1,071,349	
Balata.....	60,040	38,705	
Gutta-percha.....	7,504	2,684	
Gutta-jelutong (Pontianak).....	3,298,585	200,358	
Guayule.....	67,881	14,843	
Total.....	9,357,283	\$1,317,549	

Exports:			
	Pounds.	Value.	
India rubber.....	75,841	\$30,640	
Balata.....	46,172	44,304	
Gutta-percha.....	1,000	2,684	
Guayule.....	1,000	2,684	
Reclaimed rubber.....	2,279	228	

Rubber scrap, imported.....	1,793,549	\$166,830	
Rubber scrap, exported.....	164,225	19,416	

BOSTON ARRIVALS.

		POUNDS.	
SEPT. 14. By the <i>Columbia</i> London:			
George A. Alden & Co. (Ceylon).....		11,200	
SEPT. 22. By the <i>Hanra</i> Singapore:			
State Rubber Co.....		13,000	

PARA EXPORTS OF INDIA RUBBER, AUGUST, 1910 (In KILOGRAMS).

NEW YORK.					EUROPE.						
EXPORTERS.	Fine.	Medium.	Coarse.	Caucho.	TOTAL.	Fine.	Medium.	Coarse.	Caucho.	TOTAL.	TOTAL.
Gruner & Co.....	50,500	7,990	56,957	24,090	145,537	17,104	4,010	1,069	7,740	29,923	15,460
E. Pinto Alves & Co.....	110,840	1,700	98,670	.....	211,210	15,130	.....	.....	1,320	16,450	27,990
Adelbert H. Alden, Ltd.....	47,574	4,271	37,687	1,220	90,752	24,990	5,270	13,860	600	44,780	135,532
J. Marques.....	8,160	1,190	8,580	.....	17,939	14,620	2,550	15,180	63,690	96,040	135,570
R. Suarez & Co.....	.....	.....	.....	.....	.....	24,875	.....	9,855	15,362	50,092	50,092
Scholz, Hartje & Co.....	.....	.....	14,125	10,830	24,955	2,550	170	600	1,650	5,030	29,085
Gordon & Co.....	.....	.....	.....	.....	.....	11,969	1,206	1,935	5,490	20,600	.....
R. O. Ahlers & Co.....	.....	.....	.....	.....	.....	11,662	.....	3,566	4,675	19,903	29,093
Alves Braga Rub. Est. & Trad. Co.....	.....	.....	.....	.....	.....	12,271	1,663	1,369	940	16,243	16,243
Pires Teixeira & Co.....	3,230	.....	2,310	.....	5,540	.....	.....	.....	.....	5,540	.....
Sundries.....	117,739	5,610	9,570	.....	26,919	9,699	1,530	5,880	13,200	30,309	27,210
Itacatiara direct.....	.....	.....	.....	.....	.....	4,912	1,000	2,764	100	8,776	2,776
Manaos direct.....	174,035	51,265	88,329	59,268	373,497	404,330	42,114	18,355	71,895	530,794	974,101
Iquitos direct.....	.....	.....	.....	.....	.....	12,268	1,398	5,181	162,913	18,749	21,700
Total, August, 1910.....	412,669	72,026	316,228	95,408	896,331	566,371	60,911	79,674	349,635	1,056,591	1,355,932
Total, July, 1910.....	221,719	30,220	268,507	181,195	701,641	480,197	54,589	164,570	380,247	1,079,103	1,281,244



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INDIA-RUBBER GOODS IN COMMERCE.

EXPORTS FROM THE UNITED STATES.

OFFICIAL statement of the values of exports of manufactures of india-rubber and gutta-percha for the month of August, 1910, and for the first eight months of five calendar years:

MONTHS.	Belting, Packing and Hose.	Boots and Shoes.	All Other Rubber.	TOTAL.
August, 1910	\$212,754	\$333,915	\$525,580	\$1,072,249
January-July	1,218,628	1,013,834	3,273,268	5,505,730
Total, 1910	\$1,431,382	\$1,347,749	\$3,798,848	\$6,577,979
Total, 1909	1,164,600	872,074	2,078,534	4,715,307
Total, 1908	813,383	927,084	2,371,374	4,111,841

The above heading, "All Other Rubber," for the last two months includes the following details relating to Tires:

MONTHS.	For Automobiles.	All Other.	TOTAL.
July	value \$146,080	\$56,096	\$202,176
August	151,468	71,486	222,954

These are the first official statistics of the exports of American made tires. It will be seen that, of the miscellaneous exports of rubber in July, 42 per cent. consisted of tires, and in August 39 per cent.

SHIPMENTS TO NON-CONTIGUOUS TERRITORIES.

For the fiscal year ended June 30, 1910:

TERRITORIES.	Belting, Packing and Hose.	Boots and Shoes.	All other Rubber.	TOTAL.
Alaska	\$60,842	\$204,996	\$24,872	\$290,710
Hawaii	53,419	11,161	163,215	227,795
Porto Rico	9,120	2,031	104,490	115,659
Philippines	52,680	3,849	99,528	156,057
Total	\$176,070	\$222,037	\$392,114	\$790,221
Total, 1908-09.....	190,908	194,976	264,722	650,606
Total, 1907-08.....	162,602	235,044	217,801	615,447
Total, 1906-07.....	197,508	215,630	167,488	580,626
Total, 1905-06.....	164,606	179,210	151,260	495,260

IMPORTS OF RUBBER GOODS INTO CHINA.

A STATEMENT in *Gummi-Zeitung* on the trade of China for 1908 contains the following details regarding the value of rubber and allied goods imported, expressed in Haikwan taels [= 68 cents gold]:

Boots and shoes.....	67,240
Other rubber goods not specified.....	73,338
Machinery belting	109,078
Asbestos	142,994

The number of pairs of rubber footwear imported is stated at 82,233 pairs, whereof Germany supplied 311 pairs.

Netherlands Imports of Rubber (Official.)

INDIA-RUBBER.

YEARS.	Imports.	Exports.	Net Imports.
1901..... kilos	1,686,664	1,351,272	335,392
1902.....	1,886,815	1,607,918	278,897
1903.....	2,005,892	1,465,561	540,331
1904.....	2,436,386	1,813,767	622,619
1905.....	3,014,348	2,613,062	401,286
1906.....	3,714,900	2,542,562	1,172,338
1907.....	3,693,547	1,869,303	1,824,244
1908.....	2,958,641	1,711,877	1,246,764
Total.....	21,397,193	14,975,322	6,421,871

GUTTA-PERCHA.

YEARS.	Imports.	Exports.	Net Imports.
1901..... kilos	1,352,522	836,752	327,245
1902.....	885,421	1,073,946	
1903.....	1,270,995	932,879	338,116
1904.....	846,727	792,859	103,868
1905.....	1,310,810	955,812	354,998
1906.....	2,500,379	2,160,751	339,628
1907.....	2,420,632	1,863,739	439,251
1908.....	1,314,168	1,431,810	
Total.....	11,951,654	10,048,548	1,903,106

During three years the importations of balata aggregated: 326,200 kilos in 1906; 444,000 kilos in 1907, and 430,000 kilos in 1908.

MAKING GOODS TO SPECIFICATION
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 REGISTERED TRADE-
 MARK IS STAMPED ON
 THE INSIDE.



INDIA RUBBER WORLD

CAOUTCHOUC
 HEVEA BRASILIENSIS

GUTTA-PERCHA
 DICHOPSS GUTTA

Edited by HENRY C. PEARSON—Offices, No. 15 West 38th Street, NEW YORK.

Vol. XLIII. No. 3.

DECEMBER 1, 1910.

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THE INDIA RUBBER PUBLISHING CO.,

No. 15 West 38th Street, New York.

CABLE ADDRESS: IRWORLD, NEW YORK.

HENRY C. PEARSON,
EDITOR.**HAWTHORNE HILL,**
ASSOCIATE.

Vol. 43. DECEMBER 1, 1910. No. 3

SUBSCRIPTIONS: \$3.00 per year, \$1.75 for six months, postpaid, for the United States and dependencies and Mexico. To the Dominion of Canada and all other countries, \$3.50 (or equivalent funds) per year, postpaid.

ADVERTISING: Rates will be made known on application.

REMITTANCES: Should always be made by bank or draft, Postoffice or Express money orders on New York, payable to THE INDIA RUBBER PUBLISHING COMPANY. Remittances for foreign subscriptions should be sent by International Postal Order, payable as above.

DISCONTINUANCES: Yearly orders for subscriptions and advertising are regarded as permanent, and after the first twelve months they will be discontinued only at the request of the subscriber or advertiser. Bills are rendered promptly at the beginning of each period, and thereby our patrons have due notice of continuance.

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Entered at New York postoffice as mail matter of the second class.

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RUBBER SITUATION AT PARA.

THE recent decline in rubber prices is nowhere of deeper interest than in the Amazon country, where it is the basis of all wealth, constitutes almost the only commodity of trade, and is at the bottom of practically all gainful occupation. Naturally, in a region without diversified business interests, any fluctuation in the prices of the solitary source of income must affect every individual, and particularly any marked decline.

It is not surprising, therefore, that the leaders in the rubber trade at Pará are constantly concerned with efforts to render prices more stable, and to keep the level as high as possible. The latest move has been an organization among the receivers of rubber at that port, with a view to holding stocks from the market whenever prices fall to an extent that renders business unprofitable. Two conditions which are helpful to such action are the new regulations which permit banks to make advances on rubber warehouse receipts, and the growing consolidation of the trade in the hands of largely capitalized firms. But it is not the purpose of this article to deal with any measures having for their object the control of rubber prices by any such means as are employed in what has been termed the "valorization" of coffee, in southern Brazil.

Please Note Removal of Our Offices

Of chief interest in the proposals of the new "league" of Pará *aviadores* is that for establishing periodical auction sales of rubber, say on the basis on which the Antwerp sales have been conducted for so many years. The Antwerp "inscription" sales have been the subject of much criticism on the part of buyers, but without resulting in any change in the system since its establishment. On the other hand, the same system has been adopted in Amsterdam, Havre, and Bordeaux, so that every year more rubber changes hands through inscription sales. Meanwhile, the long established system of rubber auctions in England is coming to be regarded as unsatisfactory. Recently two and a half days were required for disposing of about 300 tons at a London auction, during all of which time prices were fluctuating. At Antwerp, on the contrary, where an average of over 400 tons have been offered at the monthly sales for several years past, all the bids are opened at once, and the results—even where hundreds of lots are involved—are published on the same day.

But whatever the system employed, the sale of rubber at public auction has distinct advantages in the matter of fixing prices, as has been recognized by the inauguration of such sales by the Ceylon Chamber of Commerce during the past month. To-day rubber prices in every market are affected—and to an extent controlled—by the results of the different auctions referred to in this article, and it appears reasonable that such effect would be more direct and of more value if public sales should be held at the primary market through which passes more than half the world's production of rubber.

THE AMERICAN TARIFF OUTLOOK.

IN the elections which occurred throughout the United States, on November 8, no question of national policy was directly involved, further than that opposition to the Tariff law which became operative last year may have affected the result. The elections were for the filling of local offices in the several States, and for the election of members of Congress. The fact, however, that the balance of party power in the lower house of Congress has been changed, points to the possibility of a complete change of party control in the nation before long, and gives hope to the opponents of the protective policy of a substantial revision of the tariff laws, and it is this feature that leads to any interest abroad in the recent election returns.

Under the American system a change in governmental control comes about slowly. The existing Congress will remain as now constituted until March 4 next, and in the ordinary course of events the new

Congress will not convene until the end of 1911. Besides, President Taft retains office for two years and a half yet, with the assurance of the support of a cabinet in political harmony with himself, and the Senate will continue to be Republican for even a longer period. The first result of the recent election, therefore, will be that, until another national election is held, the only branch of the government in which the Opposition will hold the balance of power is one of the two branches of Congress, and this condition will operate meanwhile against a radical change in legislation or administration.

While politics, in the general sense, is outside the province of *THE INDIA RUBBER WORLD*, it seems proper for a business paper to point out that neither American nor foreign business circles need concern themselves for the present with any idea of possible changes in the tariff situation in this country. But without doubt the non-partisan tariff commission already provided for by law, to be appointed by the President, will produce a report of widespread interest, containing facts and suggestions which will be considered in any future revision of the tariff, no matter by what political party.

AMERICAN EXPORTS OF RUBBER GOODS.

THE exports of india-rubber goods from the United States are beginning to reach a figure which cannot fail to command attention wherever this class of products figures in international trade. Until comparatively recent years the value of rubber goods exports was a negligible figure in the total of American foreign commerce. But all the while the consumption of raw rubber in this country was increasing rapidly. During the last fiscal year the imports of india-rubber alone were three times as large as the total imports of rubber and allied gums twenty years before. Or, including jelutong, scrap rubber and the like, the imports were six times as large as in the fiscal year 1888-89.

The fact that all this vast amount of raw material has been absorbed by the home demand forms a striking illustration of the growth of the United States. The large consumption of rubber goods, for example, has led to production on a large scale, permitting of systemization of the highest order and the application of scientific methods and processes, to the end that every possible economy has been brought to bear upon this as well as other forms of industrial production.

In the summary of foreign trade of the United States in rubber and rubber goods on another page it will be seen that the export of rubber goods has increased in a single year from \$6,615,074 to \$9,060,895, or an advance of 34 per cent. An analysis of the details points to the belief that this rate of increase has not been due to any sudden spurt in any particular field, or the opening of new markets anywhere.

On the contrary, there have been increased exports to practically every field in which rubber goods have been sold in the past—with the single exception of Japan, which affords the only decrease worth noting, and this may be set down to the efforts which that progressive country has been making for years past to supply its own markets to the fullest possible extent. It may be mentioned that the United Kingdom last year took \$2,798,578 worth of American rubber goods against \$1,761,730 for the preceding year; Canada, \$1,565,904, against \$953,897; Germany, \$713,707, against \$534,505; and so on.

The exports of American rubber goods have been fostered through the establishment of selling agencies abroad by large aggregations of capital, as compared with the former condition of small, disconnected, and intermittent attempts upon foreign markets by individuals unable to divert from their business at home more than a small amount of capital at any one time, and usually unable to wait long for returns from expenditures made in a new field. The change which has taken place in the methods of conducting the export trade in American manufactures generally is illustrated in the case of rubber footwear, the exports of which have grown very rapidly of late. The number of pairs of rubber boots and shoes exported last year was larger by 23 per cent. than in any former year.

THE RUBBER OUTPUT OF THE EAST.

SEVEN thousand tons of rubber is a good deal, no matter what the quality or its source, but the figure here mentioned relates to the probable production this year of the rubber plantations in Ceylon and the Federated Malay States, as indicated by the figures compiled from authentic sources in the statistical pages of this issue of *THE INDIA RUBBER WORLD*. It is not surprising, in view of the rapid growth of the Far Eastern rubber interest, that so high an authority as Mr. Henry Kerr Rutherford should estimate the 1916 production in these regions as high as 54,000 tons, or that the able *Ceylon Observer* should not regard his estimates as excessive.

Without doubt not all the acreage planted to rubber is destined to yield as liberally as certain estates which have been reported on fully in the pages of this journal, but it would be futile to assume that the output of rubber plantations is to be smaller before it becomes immensely larger. And this consideration is bound to yield an immense amount of comfort, not only to the accustomed users of rubber goods, but to that immense section of the world's population to which rubber and rubber goods are as yet unknown.

It is hard to see how the price of crude rubber can fall below a level profitable to owners of existing plantations which have been based on good business principles and conducted with intelligence. So long as

the world demands rubber as a necessity, somebody will find it pay to produce rubber, and from the present outlook the owners of good plantations seem to be particularly well placed in this regard.

A GOOD BEGINNING HAS BEEN MADE by the United States in the export of automobile tires. This item appears in the customs returns for the first time this year, and the shipments have been at a rate which points to a total in value of more than \$2,000,000 for the fiscal year.

IF THE FALL IN RUBBER PRICES had occurred earlier, it doubtless would have had a greater effect in limiting preparations for this season's crop on the Amazon. As it is, preparations must have been completed for the season through a great part of that region. But if present indications in the automobile trade hold good, the demand for tires is likely to call for the rubber that can be produced, and at higher prices than now prevail.

IT IS REALLY DISTRESSING that the friend of THE INDIA RUBBER WORLD who favors us with the following extract from a local newspaper should have omitted both his own address and the name of the newspaper. Our only means of identifying the paper is that it was printed on October 12:

New York bankers now control the Raw Rubber Trust, which controls the Congo and the Mexican fields. The protest against Wall street influence will soon be worldwide.

We may be permitted the hope, however, that the bankers of our correspondent's town may in time control the Cooked Rubber Trust, with a heavy thumb on the Amazon and Federated Malay States rubber fields, with the effect of offsetting the "Wall Street influence."

MEMORIAL FOR CHARLES GOODYEAR.

TO THE EDITOR OF THE INDIA RUBBER WORLD: In the past century, and especially in the rush and whirl of the Twentieth, the march of progress has been accompanied by inventions and discoveries unfolding in unbroken sequence. So many have there been, in fact, that the modern has come to receive the most important announcements of science or mechanics and marvelous creations for human comfort and convenience with a feeling of half anticipated right.

But at a time, when, enjoying so much, we are still looking forward in reveling wonder of the marvels this century, the heralded "Century of Electricity," is to afford us, it were fitting to single out and to assign to merited place those who have chiefly contributed to make our progress possible. And among them should be ranked Charles Goodyear, the discoverer of vulcanization and the founder of the rubber industry, who recently received but seven ineffective votes in the choices for the Hall of Fame.

To those acquainted with Goodyear's life, its recurring intervals of keen poverty, the elusive difficulties of his long prosecuted task and his extraordinary faith in its final achievement, it would seem that science, art and industry in the United States, so much indebted to him, by monument of preferably memorial foundation, ought to accord him that distinctive recognition, which the inestimable importance of his discoveries in rubber deserves.

This idea was long ago expressed in France, ready to accord to Goodyear his *primus* right to his great discovery, as she is ever alert to encourage genius in science, art discovery or invention. And I beg in closing to translate a paragraph from the comprehensive work of E. Chapel, "Le Caoutchouc et la Gutta Percha," published in Paris:

"Sufficient account has not been taken, in the United States,

of the character of this researcher. It is owing to him that we have been able to take so great advantage of caoutchouc, that its employment has become indispensable in medicine, in chemistry, in physics, in electricity—in a word, in all the arts and sciences, in which, in many cases, it permits the realization of progress of the highest importance. We should consider Goodyear *one of the benefactors of his race*, and must regret that no statue to that end has been raised to this Bernard de Palissy of the New World."

CLARKE DOOLEY.

Brooklyn, New York, November 7, 1910.

THE NEW RUBBER CHEMICAL SECTION.

THE annual meeting of the American Chemical Society will take place at Minneapolis on December 27-30. On this occasion the first meeting of the Rubber Section since its organization will be held. The committee on Standard Methods of Analysis and the committee on Specifications will make their first reports. A great deal of interest has been aroused in the work of this rubber section, and it is expected that there will be a full attendance. The Section will be pleased to have any of the rubber fraternity who are members of the Society enroll also as members of the Section. To those who would like to join the Section, but who are not members of the Society, the secretary of the Section, Dr. Frederick J. Maywald, No. 89 Pine street, New York, will be pleased to send application blanks, together with full information.

At a meeting of the American Chemical Society, on the evening of December 29, the Editor of THE INDIA RUBBER WORLD will deliver an illustrated lecture on "Rubber in the Amazon Country."

It cannot be urged too strongly on the rubber trade that it should support the efforts of the Rubber Section, to standardize not only the methods of analysis, but also the specifications on which rubber goods are prepared. This can best be done, by active participation in the work of the Section, and by giving it financial support. Membership in the Section will contribute to its support. Further details regarding it appear in THE INDIA RUBBER WORLD, February, 1, 1910 (page 178).

RUBBER AT THE CHEMISTS' CLUB.

At the meeting of the American Chemical Society held at the Chemists' Club, in New York, on the evening of November 11, Mr. Henry C. Pearson, Editor of THE INDIA RUBBER WORLD, gave an illustrated lecture, "The Rubber Country of the Amazon," descriptive of his extensive tour of that region, to a large audience composed of members of the society and its guests. The subject as handled by Mr. Pearson dealt with the locations visited, bodies of water, types of people, public buildings, municipal conditions, and methods of obtaining, handling and shipping rubber—all of which were reflected in the illustrations, many of which were colored. At the conclusion of the lecture a vote of thanks was tendered to Mr. Pearson by the society.

Papers were read by members of various sections of the society on "The Electric Conception of Valence," "The Influence of Vapors on the Surface Tensions of Mercury," and the "Electro Chemical Oxidation of some Hydrazine Salts." These were highly interesting and well received.

BALATA IN TIRES.

TO THE EDITOR OF THE INDIA RUBBER WORLD: Regarding the very interesting paragraphs on balata in your November issue, allow me to say that the man who tries to get elasticity out of balata is, of course, crazy, but he certainly can add strength and wear. I can show tires, *solid* and automobile, made of one-third balata, one-third maniocoba and one-third fine Pará, for the rubber portion, compounded as usual, that outwore tires made of an equal amount of fine Pará.

A MANUFACTURER.

A CEYLON VIEW OF RUBBER.

[FROM "THE TIMES OF CEYLON."]

THE most important event of the past three months has been the passing of plantation rubber, in price, from above to below the price of Para rubber. This change is due to the known fact that Eastern rubber, as at present sent to market, is deficient in the fundamental quality of resiliency. That the price would fall below that of Brazilian forest rubber has been consistently proclaimed from within—by Dr. Willis and others—as well as from without.

The East is now supplying sufficiently increasing quantities for this material difference to affect relative prices. That difference in price against the Eastern produce has come to stay, and to be increased, perhaps, by reason of the rapidly increasing supplies that Ceylon, Malaya, and other countries will send forward. Kalutara district alone will send away over 1,500,000 pounds of rubber this year, with a fifth of its planted area in bearing, over a total area that would require a magnifying glass to discover on a map of Brazil. Last year Ceylon's total export was only 1,492,580 pounds, and what Kalutara is doing the Kelani Valley has begun to do, with Matale, Kurunegala, Kegalla, Galle, Badulla, Moneragalla and other localities also already contributing.

Each year's big total increase for the next five years will mainly consist of rubber from young trees. That will be its determining characteristic, and unless improved methods of preparation can be discovered and generally applied, we shall hear Brazil interests craving—and demanding—that the term Para be exclusively used for the superior article, the while that we suffer in *amour propre* and our pockets.

The tapping of young trees and the harvesting of the maximum quantity obtainable without injury to the trees will still be the wish of owners and the object of superintendents, even should the market price fall to half what it is at present, but the young rubber should be kept separate more than it is from 7 or 8 years old rubber and upwards. Systematic investigation within the next five years will add to our knowledge greatly, and possibly will provide the plantation industry with most satisfactory results.

Supposing the absence of knowledge as to how best to prepare estate rubber costs no more than 1 shilling per pound from the middle of 1910 to the end of 1912, Ceylon interests alone will lose £1,000,000 sterling, so that it will be seen that with a fair possibility of gaining—or saving—that sum of money in the next two years, half-a-company of investigators could have been usefully employed during the past two years, instead of no more than a corporal's guard in number though of conspicuous personal ability.

It is believed that Ceará in Ceylon.—*Manihot Glaziovii*—will yet be justified and restored to a front place by means of seed selection and improved tapping methods; and why should not Hevea seed selection, correct knowledge of how much the trees should be rested at various ages and various stages of the year and in different localities, right treatment in manufacture—wet, dry, smoked, and so on—improve the standard of plantation rubber? These points suggest avenues of valuable information which will surely greatly strengthen the plantation rubber industry and justify the view of all of us that Brazilian wild rubber collection must shrink to small dimensions.

It may be argued that it would be wrong to speak of a loss of £1,000,000, because if trees were allowed to run fully five years, or grow to fully 20 inches in circumference at 3 feet from the ground—which was the idea five years ago—the yield would be, say, 25 per cent. less, and what the 25 per cent. will fetch would nearly balance the £1,000,000. Admitting there is force in this, yet would we prefer to see the prestige of our rubber enhanced; and if it could be achieved, the capital value of our rubber estates would be raised by much more than £1,000,000.

FROM THE CEYLON CHAMBER OF COMMERCE.

TO THE EDITOR OF THE INDIA RUBBER WORLD: I am desired by my committee to acquaint you, with a view to your being agreeable to give publicity to the same through the medium of your journal, and so attract the attention of manufacturers, that it was decided at a special general meeting of this chamber held on the 27th ultimo to hold weekly auctions of rubber in Colombo, and that these, for the present, will take place on Friday in each week, commencing from November 4.

While the quantity of rubber offered at these auctions may be limited to begin with, it is confidently hoped that in course of time these auctions may be attended with as great success as the weekly tea sales, and that Colombo, in view of its excellent geographical position and general trade and tonnage facilities, may rank in the near future as one of the chief distributing centers in the world for plantation rubber.

I am to express the hope that you will favor the suggestion of making the institution of these auctions known. - - - I am, dear sir, Yours faithfully,

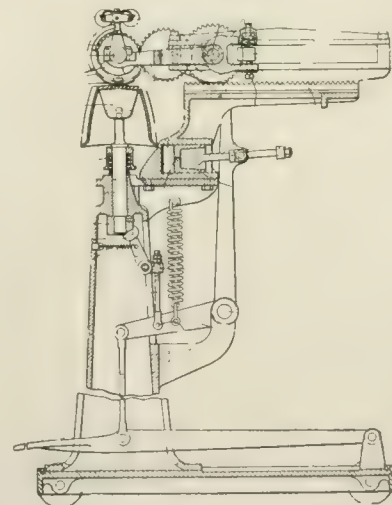
F. M. SIMPSON, Secretary.

Colombo, Ceylon, October 6, 1910.

[THE inauguration of weekly public sales of rubber at Colombo was referred to in THE INDIA RUBBER WORLD, November 1, 1910—page 66.]

PRINTING ON RUBBER FOOTWEAR.

THE machine illustrated here consists of a vertical support for the rubber shoe, and a printing head on a movable carriage, and is operated by foot power. The rubber shoe on its last is placed upside down upon the support. On a level with the sole is a self-inking printing roller. Pressure on the foot lever causes the printing roll to advance and stop just above the shoe, while



MACHINE FOR PRINTING ON RUBBER FOOTWEAR.

at the same time the vertical support is raised and the impression is made. Release of the lever causes the carriage of the printing roller to run back to its original position on the side. This invention is covered by United States patent No. 962,515. [The J. W. Moore Machine Co., Boston.]

UNDER the title "Aperçu du Commerce et de l'Industrie des Pays-Bas" the royal ministry of landbouw, nijverheid, en handel (agriculture, industry, and commerce), at The Hague, are reporting on progress in Holland for foreign distribution, French being chosen as the medium rather than the Hollandish language. No. 12 of the series deals with the chemical industry, in which is included the manufacture of india-rubber and gutta-percha goods, to which four important establishments are devoted. [Paper. 8vo. Pp. 36.]

Combination of Pará Rubber Receivers.

[WHAT follows is an editorial article from the Pará journal, *O Comércio Norte-Brazileiro*, after which is an extract from the market review of the same journal, the date of publication being October 22, 1910.]

THERE has been formed in Pará, for a most commendable purpose, a *Liga dos Aviadores** [League of *Aviadores*, or Dealers], being composed of merchants interested in preventing the continuous depreciation in the price of rubber, thus safeguarding the interest of the market and putting it beyond the speculative influence of the so called "bears."

This is the main purpose of the League, which has succeeded in securing a union of the rubber depositaries, with the idea of holding back offerings in order to sell them at the desired prices. For this purpose a capital of 1,000,000 milreis [about \$304,100] has been subscribed in shares of 100 milreis, each kilogram of rubber contributing an assessment of 50 reis towards the operating fund. The league also counts upon the financial support of the federal government and also on receiving some favors from the state of Pará.

A board of directors has been elected which, in order to meet the conditions of the present crisis, can adopt the required measures, such as the establishing here of a brokerage system similar to that existing in Antwerp; also the establishing of a purchasing center for buying small lots at sight, in order not to hamper the economic progress of the small dealer—and other measures of immediate and practical efficiency. To keep back rubber without an adequate fund for this purpose hardly seems advisable to us.

At a meeting held on October 2, in the hall of the Real Sociedade Beneficente Portuguesa (Royal Beneficent Portuguese Society), for the approval of the by-laws and election of the administrative officers, Senhor Narciso Romariz spoke of the situation confronting the rubber trade, expressing the opinion that the center of production is where the price of the article should be fixed, and that this should not be left to the mercy of the speculative market in England, and to this end factories should be established for entering into competition for the manufactured product.

Notwithstanding the applause that greeted this proposition of Senhor Romariz, we are sorry to say we regard it as inopportune, if not impracticable, at least for the present. Indeed, if we examine briefly into the composition of the manufactures into which rubber enters as raw material, we shall find that the percentage of Amazon rubber employed is limited, this being skillfully employed to give greater elasticity to other kinds of weak rubber which we do not have here, and which would have to be imported, this one single fact involving a great disadvantage.

On the other hand, manual labor would be very dear, because, as we do not have professional workmen here, we should have to send to European or American centers for them, and they could only be induced to leave the factories where they are now paid liberally and have an assured future, if a flattering proposition were made them, because, apart from other drawbacks, the European and the American still regard Pará as a hotbed of yellow fever.

In addition to this, what an enormous outlay of capital would be required for machinery and its installation, each manufactory having its special machines and apparatus, which would have to be imported, and we have absolutely no mechanical es-

tablishment that is in a position to do any casting, or even to make the slightest repair to some delicate piece.

Another consideration of great importance, if not the principal one, is that of the capital. It is well known in trade circles what difficulties are encountered by a new company in organizing with a capitalization of 1,000,000 milreis, with shares of 100 milreis each, and a factory in a position to meet competition from another one of its kind would cost much more than 1,000,000.

Neither should we be able to fix the price of rubber because there are other centers of production besides our own, which are subject, like ours, to the laws of supply and demand.

* * *

TRADING in rubber has been almost at a standstill by reason of the decline in prices, and the action of the Rubber Dealers' League in holding back the amount produced from day to day. For several weeks in succession there has been no transaction in this line, and this enforced paralysis acts as a wet blanket on the rest of the market.

The league will, however, begin weekly auction sales similar to the ones held at Antwerp, which proceeding, as it favors the purchaser here and abroad through the free and open competition it affords, will have a very stimulating effect upon business.

The deputy Bento Miranda submitted a bill for the consideration of the state congress reading as follows:

ARTICLE I.—The governor of the state shall be authorized to take such measures as he may deem expedient with regard to the present critical situation of rubber, in order to protect the product from the unwarranted depreciation that threatens it, being empowered for this purpose to take administrative action, to open credits, to create institutions of credit and extend such assistance as he may consider necessary, with the idea of reestablishing normal conditions in the market for this product, and avoiding, as far as possible, excessive speculation.

ART. II.—Everything now in force in contravention of the foregoing is hereby repealed.

The following are the directors, the firms to which they belong, and the number of tons handled by each annually:

	Tons.
Senador José Porfirio de Miranda, Junior (A. F. de Sousa & Co.)	600
Angelo Amador Leite (Leite Co., Inc.)	620
Senador José Pinto Ribeiro (Mendonça & Ribeiro)	450
Thomé de Vilhena (Thomé Vilhena & Co.)	250
Wan-Dick Amanajás do Tocantins (Barbosa & Tocantins)	800
Luiz Dias da Silva	250
Isaac J. Roffé (Isaac J. Roffé & Co.)	330
Abílio Augusto Certo (Pinho & Certo)	500
Ernesto Baptista da Cunha (Silva Cunha & Co.)	350
Manoel F. Barreiros Lima (Freire Castro & Co.)	300
Antonio Brandão Dias (Martins Abreu & Co.)	...
Antonio Barbosa Rodrigues (Candido José Rodrigues & Co.)	200
Saul Cagy (Alves Braga Rubber Estates and Trading Co., Limited)	500
José Solheiro (Solheiro & Co.)	270
Antonio José de Pinho (Mello & Co.)	600
Plácido Felipe Ribeiro (B. Antunes & Co.)	1,300
José Furtado de Mendonça Sobrinho (José Furtado Mendonça & Co.)	500
Dr. Fernando Mello (Mello, Frotas & Co.)	220
Antonio Nunes Victoria (E. Pinto Alves & Co.)	450
Camillo Velhote (Velhote Silva & Co.)	180
Menassés Bensimon (Bensimon & Coriat)	150
Raymundo Rocha Pereira (Pereira Lemos & Co.)	400
Raymundo Rodrigues Vieira (Vieira & Irmão)	50
Alfredo J. de Sousa (A. J. de Sousa Pereira & Co.)	200
Total	9,470

These are the principal receivers of rubber, at Pará, with whom others of minor importance will naturally affiliate themselves in their own interest, thereby constituting themselves a veritable *bloco* (trust). In this way the exporter as well as the small dealer will profit, as they will have but a single entity to deal with—one beyond the reach of the machinations of the "bears."

Consequently the governing body—i. e., the *Liga dos Aviadores*—receives annually 9,470 tons out of the 16,000 tons of rubber exported from there. [These figures do not include rubber shipped direct from Manáos or other parts up the Amazon.—I. R. W.]

*The major part of the rubber arriving at Pará is consigned to merchants there called *aviadores*—the Portuguese word *aviador* meaning literally "furnisher of funds," or one who prepares another for a journey or voyage. The custom is for the owner of a *seringal* to make requisitions upon an *aviador* for the camp supplies needed for a season, and to ship rubber as produced to liquidate the advances. The *aviador* sells the rubber as received to the exporting houses at Pará.—THE EDITOR.

A SAMPLE OF FRENCH PROMOTING.

FROM THE "JOURNAL DES BANQUIERS," PARIS.

HERE is a grand undertaking: the Société des Manufactures Françaises de Chaussures en Caoutchouc. [French Company for the Manufacture of Rubber Shoes.]

When I say that this is a grand business, it is because I have just read the prospectus of the smart Englishmen who have launched it; and as this prospectus is replete with enthusiasm, I follow the movement. But, as a matter of fact, I have no idea as to the future of rubber shoes in our beautiful France, and therein lies the question.

It would possibly be advisable to address an inquiry to all mothers of families to learn their opinion on this point. Possibly a parliamentary commission could be created, only framed by a crowd of ignorant and blatant officials. This last method of obtaining information has the advantage of costing much more than all the others, and of never amounting to anything.

Let us institute this inquiry among ourselves—who will use rubber shoes in our land of France? To whom would the rubber footwear be of use? Outside of the old waterproofs that cover the entire footwear against rain or snow, we have no other models in common use than the shoes of cloth and rubber, or leather and rubber, used for sporting purposes and on the shore; and these shoes are charged with being disagreeable to wear.

For some years, it is true, efforts have been made, and with a certain degree of success, to introduce in France a rubber foot-gear part shoe, part bootlet. May we conclude from this cursory observation, that there is among us, a certain demand for rubber footwear, although our customs, our climate, and possibly, above this, the instinctive taste of our people, will never adopt this footwear as a practical model for common use. We must go to America, and to regions less favored by nature, like the Scandinavian countries and Russia, to find daily and rational use for rubber shoes.

Nevertheless, France, it appears, is indebted to foreign countries for a large proportion of its requirements in this specialty. There are manufactured at home but 3,000,000 pairs of rubber shoes annually, out of 7,000,000 that are sold. Only three factories manufacture this article, the Etablissements Hutchinson, the Etablissements Torrilhon, and the Société industrielles des Téléphones. Hutchinson alone sells nearly 2,500,000 pairs annually. And yet, if we are to believe the promoters of the new company, the productions of these various establishments are very inferior to the American and Russian products. In America, the two most important factories making a specialty of these goods, produce 35,000,000 pairs annually. In Russia, the manufacturers turn out annually 24,000,000 pairs, and these do not suffice to supply the home consumption.

The Société des Manufactures Françaises de Chaussures en Caoutchouc, maintains, that if France has not as yet been successful in this special industry, it is because the technical knowledge was not possessed by the actual producers; there are, in the manufacture of rubber shoes, two delicate operations, vulcanization and varnishing. The new factory employs an ingenious and direct method of vulcanizing and varnishing. And its fortunate shareholders will make a large amount.

The Société also profits by the customs duties, which amount, on each pair of rubber shoes imported into France, to about 90 centimes (80 to 120 francs per 100 kilos according to quality and 120 francs per 100 kilos for the American product). On the whole, adding the protective duty to the manufacturing profit, the new company expects to make a profit of 1.50 francs [= 29 cents] net on each pair sold.

With these data, and reckoning 5,000 pairs per day, the profits would be 2,250,000 francs. And, as the capital of the Société is only 3,000,000 francs, in shares of 100 francs, it follows that the shareholders will receive at least 40 per cent. in dividends the

first year, allowing the founders their statutory 30 per cent., and for other expenses, legal advice, amortissement and personnel, each a sum of 10 per cent. The Société announces that it will establish its factory at Mauld-Montagne (Nord) and that its total output for the first year is already sold under contract. It must not be overlooked that the factory has not yet been constructed.

From the financial point of view, of the capital of 3,000,000 francs, there will be 2,200,000 francs of floating funds, of which 1,300,000 will be for the construction of the factory and 900,000 for the expenses of organization.

In conclusion, while this enterprise presents features sufficiently attractive for specialists, it is presented by its promoters with an optimism that appears quite extravagant. And we fear still more the bluff that if, according to the foregoing published figures, the profits should be 4½ millions the second year, it is stated that the returns on the business would be at least 300 francs [100 per cent.] per year. Imprudent presumption, all else being useless.

THE AMAZON RUBBER PROSPECT.

["TIMES OF CEYLON" LONDON CORRESPONDENT.]

SOME time ago a friend of mine went to Brazil and promised to let me hear from him what he could gather about probable supplies of rubber in the near future. Though other matters took him there he is a large shareholder in plantation companies and a man of excellent business capacity, so that I attach great importance to his views. By last mail I heard from him, and this is what he says:

"I promised to tell you the result of my inquiries as to the probable crop of rubber in the Amazon valley next season. I have met several men from Pará and Manáos who know the rubber trade—one of them actively engaged in it—and the conclusion I have come to is that there cannot be any large increase next season. A very large amount of the financing of the expeditions is done through the ——— Bank, and I hear from them that nothing more than usual has been done so far, and this is about the time when preparations are made.

"From the *seringueiro* (rubber shipper) I had a talk with I gather (1) that labor is scarcer than usual owing to the good wages being paid by the Pará harbor works and the Manáos city improvements; (2) that even if labor could be obtained by paying higher wages for larger expeditions the effect would not be great next season, as it takes time to open up new *estradas* (or paths) required to reach the trees, and (3) that all the properties within easy reach of transport are already worked for all they are worth.

"It looks, therefore, as if there were not much likelihood of the market being swamped by largely increased supplies from Pará, though no doubt the price may lead to extra exertions. I think if you put the possible increase at 10 per cent. it is the outside that could be achieved. If then the price of rubber is likely to be maintained for another year or till the end of this year even about 10 shillings per pound (which seems not improbable) it seems to me that the present price of shares in the larger producing companies is not too high and is likely to be maintained even though there may be fluctuations due to speculation."

I think you will agree that this is a very valuable opinion coming from one on the spot who has exceptional opportunities of getting the best information. Of course, it may be said that a large amount of capital has been put this year into new propositions in South America, but it is significant that the writer does not think this factor worthy of mention, and he would probably say that even if these new companies will eventually add substantially to the world's supply it will take them longer than they anticipate to get their affairs into working order.

The India-Rubber Trade in Great Britain.

By Our Regular Correspondent.

THERE has been issued recently the prospectus of the Re-inforced Rubber Co., Limited, with the capital stated of £100,000 [= \$486,650]. Of the 60,000 shares issued, 20,000 shares go to the vendors, the All Rubber Pneumatic Tyre Co., Limited. The patents taken over are Nos. 24,661 and 21,663 of

A NEW COMPANY

1908 and No. 23,308 of 1909. The goods it appears are to be made from (1) new rubber, (2) rubber substitute, (3) old and waste rubber. As their manufacture is stated to exhibit a decided saving of cost compared with similar quality goods turned out of the ordinary rubber works, profits sufficient to pay a dividend of 20 per cent. are confidently anticipated. So far I am in possession of no details except so far as they are disclosed in the prospectus. I can understand the reference to goods made from new rubber and from waste rubber, but surely it cannot be proposed to manufacture from substitute alone. Probably this is a defect in drawing up the prospectus. I do not recognize the name of any rubber man on the board, and there is no report from any rubber chemist or manufacturer as to the value of the patents. It appears that difficulty has been found in getting rubber firms to manufacture the goods to order, and Mr. J. L. Major, the chairman, has offered to put up a factory at his own expense and to make and supply the goods to the company. Arrangements are now being made to carry this through, the locality being Sculcoates, near Hull, Yorkshire. In addition to general mechanical goods, special attention has been given to the boot and shoe trade, where it is stated the re-inforced rubber sole has proved its advantage over leather. Orders for motor car tires are also in hand.

Mr. H. A. Dawson, managing director of the vendor company, who has been connected with the invention from the beginning, will act as sales manager to the new company. He estimates that the profits will be 4½ pence per pound on the lowest quality, and a shilling per pound on the higher qualities. I don't know whether any one else is in the field with "re-inforced" rubber, but the possibility does not seem remote that, if the business looks promising, we may expect some such competition as has arisen in the case of "re-formed" rubber.

The editorial article under this heading in THE INDIA RUBBER WORLD for September 1 (page 410) invites a word or two of

THE CHEMIST IN THE RUBBER INDUSTRY

comment. Reference is made to the day when crude rubber was purchased principally on the strength of its general appearance, and a comparison is instituted with to-day, when the chemist's analysis "to a large extent" forms the basis of purchases. I am unable to speak for America, but as regards Great Britain I may say that no change has taken place in the procedure of buying and selling. The great bulk of raw rubber changes hands to-day without the chemist coming into the matter at all. In the case of a few purchases he may be consulted, but there is nothing in England to warrant the statement that purchases are to a large extent controlled by analysis. I am not concerned, in these few lines, to argue the pros and cons of this matter of analysis; I merely wish to state the facts. Of course one sees a great many more analyses of crude rubber to-day than was formerly the case. Analyses are continually being made at the Imperial Institute and by chemists attached to various forest and plantation companies, and no doubt these analyses in many cases form a guide to the buyer of crude rubber. This, however, does not bring the sale of raw rubber into line with that of the various commercial commodities whose sale is always carried out on analysis.

I don't altogether approve of the description of an analyst as "a mechanic who potters in chemicals." Analysts of course may be competent or otherwise, but if they are of the competent variety many more appropriate designations are available. In the case, however, of commercial commodities in bulk, the work of the analyst sinks into insignificance compared with that of the sampler, who is frequently though erroneously looked upon as a person of little importance or responsibility. If the sample taken from a consignment of so many tons of a commodity does not truly represent the bulk, the time and expense of an analysis is wasted, and more than this, an incorrect value of the consignment is arrived at. Owing to its uniformity year after year, fine Pará rubber is bought almost without inspection, and if analysis were introduced I should expect the usual differences and disputes between buyer and seller on account of the analysts on each side differing.

With regard to low grade dirty rubbers, the taking of a sample really representative of the bulk would be a matter of great difficulty, and a good deal of expense would be involved if the operation were extended to all the various lots on sale. If this is really done to any large extent in America it would be interesting to hear more detail on the matter. I am not speaking without some knowledge of sampling: in the case of one low grade commodity in bulk I am accustomed to spend as many days over taking my sample as the chemist takes hours for his part of the job. In work of this sort the method of procedure followed has been hallowed by long experience, and I foresee many difficulties in the way of putting the sampling of low grade raw rubbers on the scientific basis which alone will satisfy buyer and seller. Of course in the sale of washed or partially washed rubbers, which are comparatively uniform in composition, sampling and analysis can be carried out with very little difficulty, but I have no information whether this has become a regular practice or not.

With regard to other observations in the position of the chemist in the rubber industry, I think rather too much importance is attached to his utilities. A post graduate course college man may be able to take "a long distance view" of the various processes, but unless his knowledge of "chemical principles" has been supplemented by a somewhat lengthy practical course in the factory, I doubt if his services will be of the high value the writer of the article imagines. What the manufacturer wants in a chemist is a man who knows rather than one who is prepared to experiment from his knowledge of "chemical principles." A case in point occurred recently when, despite the abundance of college trained men at hand, a prominent American rubber firm engaged the services of an Englishman with no college education whatever to put them right on a certain branch of their manufacture. He will go entirely by rule of thumb, but he will get there, and that is what the firm want.

A COMMUNICATION on the "Use of Pyridine in Rubber Analysis," by W. J. Britland and H. E. Potts, appeared in the *Journal* of the Society of Chemical Industry for October 15. The general rule is that

PYRIDINE IN RUBBER ANALYSIS

papers are read before one of the local sections of the Society, where they can be discussed, and it is not clear why in this case the very unusual means of publication was adopted by the council. Briefly summarized, the authors by means of mixings specially made up find that the method given in Weber's book for the estimation of pitch or asphalt by extraction with hot pyridine is quite worthless. They found that where 5 per cent. of asphalt was present the pyridine extract was even less than where no asphalt was present. The

same result was obtained whether paraffine wax was present or not. It is a truism that rubber analytical methods which have been generally accepted are continually being proved inaccurate by the light of subsequent research, but the paper under notice is exceptionally iconoclastic. The bitumen used is described as refined bitumen, but it must not be overlooked that there are various bodies generally referred to as bituminous which are now used to a greater or less extent in the rubber industry, and these bodies do not by any means behave uniformly towards the various solvents. There are, for instance, coal tar, coal tar pitch, stearine pitch, mineral rubber, gilsonite, and one or two other American products of the nature of elaterite. Then there is the regular asphaltum, or Trinidad pitch. There are differences in the behavior of these bodies towards acetone, and as this extraction always precedes that of pyridine, it is easy to see that discrepancies may arise.

The main point, however, is as to the solvent action of hot pyridine on vulcanized rubber, and the authors show that this is great enough to make the estimation of bitumen in this way worthless. With regard to this, it may be noted that they used a high class mixing, containing 62 per cent. Pará rubber and 5 per cent. bitumen. I am of opinion that much more accurate results would be obtained in the case of the lower grade mixings, into which bituminous bodies usually enter. Very accurate results cannot really be expected in any rubber analysis, but where there is over 10 per cent. of a foreign body present it can in most cases be estimated to a fair degree of accuracy.

Mr. J. H. ANDERSON, the governing director of the important waterproofing firm of Anderson, Anderson & Anderson, died on October 2, at the age of 70 years, after having been connected with this branch of the trade nearly all his life. This

OBITUARY NOTES.

firm, whose business consisted principally in making up garments from proofed cloth, was located in the Hackney Wick district of London, with large premises in the City for the wholesale and export trade. Although at one time Mr. Anderson was connected with the proofing firm of Anderson, Abbott & Anderson, whose rubber factory is in Dod street, Limehouse, the two concerns have been for many years quite distinct. Mr. Anderson was a genial man, with many public interests, and on more than one occasion stood for Parliamentary honors, though without success. In the army and navy the name Anderson is almost synonymous with that of waterproof, owing to the close business connection that the firm has long engaged with these government departments. Although the firm has been "limited" since 1893, it is what is known as a private limited company, confined to members of the family or close connections.

Mr. Ralph Slazenger, one of the sheriffs of the City of London, died at the end of October. He was early connected with the rubber trade, having, about 35 years ago, founded the firm of Slazenger & Sons in Manchester. In 1878 the business was transferred to London, where the manufacture of requisites for lawn tennis and other games was taken up. Of late years this has been the main business of the firm, the covering and marketing of lawn tennis balls being a prominent branch, more especially since Mr. Doherty, the ex-lawn tennis champion became associated with the firm. All the important business in lawn tennis balls in Great Britain, for many years past, may be said to have been practically in the hands of two firms—Ayres and Slazengers. Mr. Slazenger was a man of many and diverse activities. At one time he held a commission in the Volunteer forces, and was also associated actively with political and philanthropic institutions. In 1889 he married the widow of the Hon. Robert Stokes, of New Zealand, while his early connection with the Manchester rubber trade was kept up by the marriage of his sister to Mr. Frankenburg, of the well known Salford firm.

Mrs. Sarah Hancock, who died recently leaving many charitable bequests out of her fortune of £280,379, was a daughter-in-law of

Thomas Hancock, the widely known pioneer of the rubber trade in England. The business founded by Thomas Hancock in Goswell road, London, in 1820, was afterwards carried on by his son, Mr. J. Lyne Hancock, and is now, under the style of J. Lyne Hancock, carried on by Mr. Hancock Nunn. It is hardly necessary to say that the last 90 years have witnessed many alterations and enlargements of this pioneer rubber factory.

Dr. C. W. THIEL, who has had more than one reference in these notes in recent years, has given up the directorship of the important concern he joined not long ago at Berlin and returned to Messrs. Reddaway, Limited, at Pendleton, Manchester, to take up the position of works manager. It must be six or seven years since Dr. Thiel left Reddaways, where he was chemist, to go to the Calmon works, at Hamburg, and later to the Harburg-Vienna works at Harburg. Whether on account of the above appointment or not I do not know, but Mr. J. T. Wicks, who lately has been works manager at Reddaways has vacated that position. It has already been mentioned that Mr. J. W. O. Walker, who for many years was the general and works manager at Reddaways, resigned that position to take up a similar one at the new works of the Wood-Milne Co., at Leyland.

PERSONAL MENTION.

CRUDE RUBBER INTERESTS.

NEW METHOD OF PACKING RUBBER.

IT is reported from Manáos that Messrs. Pontes de Carvaltio and Samuel Levy have devised an interesting new method of packing rubber as a substitute for wooden cases and barrels. The receptacle is composed of iron rings, and is similar in appearance to the chain purses carried by ladies. It is locked at the opening by a key, the duplicate of which, may be kept by the consignee and complete security is thus obtained. It weighs less than the cases or barrels at present in use, and takes up little space when empty. The inventors have christened this contrivance the "Chrysophore."

RESULTS OF MABIRA FOREST.

THE Mabira Forest (Uganda) Rubber Co., Ltd., report that the output for the month of August was 10,000 pounds. Tapping was interfered with by heavy rains. The yield in August, 1909, was 15,125 pounds, and in August, 1908, 3,170 pounds.

RUBBER WORKERS' "MASCOTS."

WRITING on rubber gathering in Matto Grosso, Mr. J. C. Oakenfull in a recent book ("Brazil in 1910") says of the rubber workers: "Each man bears with him a small figure of his patron saint for luck, and woe betide the fetish if Dame Fortune does not smile on the bearer. The poor saint is either burnt, hung, or chopped up, and another protector chosen. A strange superstition exists that a stolen mascot brings great luck to the stealer, and misfortune to the former owner."

RUBBER EXPORTS FROM PARAGUAY.

THE United States Consul at Assuncion, Mr. Cornelius Ferris, Jr., makes a further report in rubber in Paraguay. [See THE INDIA RUBBER WORLD, January 1, 1908.] The company La Industrial Paraguay, of Asuncion, owning extensive lands in the north of the republic, exploited for lumber and "yerba maté" (Paraguay tea), have discovered many wild rubber trees on their property, from which last year they exported 1,000 kilograms of rubber to Hamburg, via Buenos Aires, realizing 7½ marks per kilogram [= about 69 cents per pound]. The tree is known locally as "manga-icé" or mangaicy, and by other names, and elsewhere as "mangava" and "mangabeira," and is reported to be the species known botanically as *Hancornia speciosa*. This tree is referred to as yielding an important amount of the rubber exported from Matto Grosso in Brazil. The Paragua Company are planting the "manga-icé." [Daily Consular and Trade Reports. September 7, 1910.]

Some Rubber Interests in Europe.

REPORT OF THE HARBURG-VIENNA COMPANY.

THE directors of the Vereinigte Gummiwaren-Fabriken Harburg-Wien (vormals Menier-J. N. Reithoffer), Actiengesellschaft, in their report for the thirty-eighth business year of the company, ended June 30, 1910—presented at the annual meeting on October 29—call attention to the exceptionally high price of raw material and the difficulty of obtaining correspondingly larger prices for their products, in the face of which facts the net earnings were larger than in the preceding year. The financial statement is summarized in the following table, which shows dividends for the year amounting to 7 per cent., against 6 per cent. for the year ended June 30, 1909

Net profit this year.....	M 617,775.21
Dividend 5 per cent on the entire capital.....	300,000.00
	M 317,775.21
Less 10 per cent. commission to the directors.....	31,777.52
	M 285,997.69
Balance from the preceding year.....	157,098.90
	M 443,096.59
Dividend 2 per cent. on the entire capital.....	120,000.00
Balance to 1910-11.....	M 323,096.59

The report contains some interesting particulars regarding the "participation" of the Harburg-Vienna company in other corporations:

Compania Explotadora de Caucho Mexicano, Mexico.—This company having been converted into an English joint stock company, we have realized on our interest. The surplus obtained, as compared with book value, we have applied to writing off.

International Galalith-Gesellschaft Hoff & Co., Hamburg-Paris.—This company, during the past year, has worked satisfactorily and achieved a good result, so that, with liberal writing off, a dividend of 10 per cent. has been set aside for distribution. In order to promptly execute incoming orders, an enlargement of the plant must be undertaken.

Kautschukgesellschaft Schön & Co., Harburg.—This company, for the first year of its existence, has also operated satisfactorily, so that while writing off liberally, a dividend of 6 per cent. became available for distribution. For the current business year also, as far as can be judged at present, a good outcome is promised.

Harburg and Vienna India Rubber Co. (of Great Britain), Limited.—This company, originating in our former London agency, has had to suffer under the unfavorable combination of circumstances, and consequently has operated with but little satisfaction.

The following details appear in the report:

"In Austria-Hungary, in spite of the Austro-Hungarian agreement, we were confronted with low-selling prices, being seriously affected by foreign competition. For centralization purposes we have, since July 1 of the current year, transferred the commercial management of our Linden works to Harburg. The Linden plant now serves entirely for the manufacture of certain special articles."

AKTIENGESELLSCHAFT "KAUTSCHUK" IN RUSSIA.

Referring to the recent mention of this company in these pages [see THE INDIA RUBBER WORLD, October 1, 1910—page 21], it is proper to state that the circular relating to its formation was not sent out by the Gummiwaren-Fabrik "Russia" Gebrüder Freysinger, of Riga, but by the organizers of the company first named in this paragraph. The new company, whose board of directors include the owners of the "Russia" company, have secured the exclusive sale of the products of the "Russia" company, and taken over all the branch establishments of the latter concern, which gives the new company an exceptionally well-organized selling organization, extending all over Russia. The Aktiengesellschaft "Kautschuk," at the same time, have entered into negotiations with several other rubber companies, in different countries, for the exclusive sale of their products in Russia. The new company is under the control of Herr S. Gens, an old employé of the Freysinger company, and latterly its chief business manager.

GOOD ELECTRICAL BUSINESS IN GERMANY.

At the twenty-seventh annual meeting of the Allgemeine Elektrizitäts-Gesellschaft (Berlin: October 15) the directors recommended a dividend for the year ended June 10 of 14 per cent. The dividend was 8 per cent. for 1902-03, and has increased during the successive years to 9, 10, 11, 12, and 13 per cent., and now the figure is 14 per cent. Meanwhile the share capital has been largely increased, being now 86,000,000 marks [= \$20,468,000]. The net profits from manufacturing in the past year were 12½ per cent. larger than in the preceding twelvemonth. The profit on securities owned by the company was devoted to offsetting the depreciation account.

NEW CABLE WORKS IN ENGLAND.

THE directors of Deutsche Kabelwerke Actiengesellschaft, of Rummelsburg-Berlin, have resolved to increase the share capital of the company from 3,500,000 marks to 5,250,000 marks, by the issue of new shares which have been taken over by the Dresden bank at 115½ per cent., and are to be offered to existing shareholders at 125 per cent. The new capital is to be used in extinguishing the bank debt, the extension of the German works, and the erection of a branch factory in England. It is stated that the work in England will be proceeded with by the British connection of the German concern—the Union Cable Co., Limited—on the banks of the Thames, near London, and that the latter company consequently will also raise its share capital.

DANISH RUBBER GOODS TRADE IN 1909.

THE following data are taken from the report on Danish industries for 1909, published by the Copenhagen Industrial Association:

"The year proved to be less satisfactory for the rubber goods industry, in consequence of the very considerable advance in the prices of the crude material. While this branch of industry had made great progress during the past few years, its development appears to be at a standstill at present, although it will probably not remain in this condition for any length of time.

"The Alstieselskabet Mariendal Gummivarefabrik, organized in 1908 with a capital stock of 50,000 kroner [= \$13,400], went into the hands of a receiver on December 29, 1909, and there is no probability of its resuming operations.

"While it is well known that repairs to bicycle rubber tires are generally made by blacksmiths and machinists whose principal line of business consists in repairing bicycles and selling second-hand rebuilt articles, the rapidly increasing use of automobiles in Copenhagen has resulted in the establishment of special shops whose owners are exclusively engaged in work on automobile covers and tire tubes. As an instance for a rather important establishment of this kind, we mention the Aktieselskabet Dansk-Russisk Vulkaniseringsanstalt, with a capital stock of 15,000 kroner [= \$4,020], whose shop employs about twenty-five men. The cost of the plant was about 15,000 kroner, and part of its work is based on certain manufacturing secrets."

Aktieselskabet de Forende Gummi-og Luftringefabriker (Schönning & Arvé), at Copenhagen, distributed a dividend of 15 per cent. for the business year ending November 1, 1909, against 10 per cent. in previous years, which, *Gummi-Zeitung* remarks, apparently contradicts the initial remark of the Copenhagen Association report.

SWEDEN.

THE firm of Gunnar Hirsch, dealers in rubber goods, in Stockholm, established in 1903, have succeeded in building up an important business, extending far beyond the limits of Sweden. The proprietors are Gunnar Hirsch and Carl A. Johansson. The firm do an especially large business in waste rubber.

RUSSIA.

THE newspapers report a strike of 750 workers employed by the Moskau-Gesellschaft für Gummiwaren-Fabrikation, at Moscow, on account of a new method of making galoshes. It was alleged by the employés that more time was required, without an increase in wages. At a special meeting the directors resolved to set aside 50,000 rubles [= \$25,750] for the extension of the business.

The mercantile firm of Pichlau & Brandt, of Moscow—dealing particularly in rubber goods—are insolvent. At a meeting of creditors on October 2 the liabilities were stated at 400,000 rubles, of which 220,000 rubles were due the Russian-American India-Rubber Co. "Treugolnik" and 105,000 rubles to the firm of E. Brandt, also of St. Petersburg.

FRANCE.

THE Société Anonyme des Anciens Etablissements Chauvin has been formed to engage in the manufacture and sale of rubber goods. The capital is \$900,000 francs [= \$180,000], and the headquarters rue des Boulets, 50. The new company will continue the factories of the former companies Garrouse fils; Beauquier & Co., in Garnay; and Chauvin, in Pavillon-sous-Bois.

The French engineer Villiam Hausser, connected hitherto with important rubber factories in this country, has been appointed sub director of the branch which the American firm of Goodrich are organizing in Paris as the Société Française B. F. Goodrich.

GERMANY.

At a general meeting of shareholders in Deutsche Zakinwerke A.-G., at Nordhausen, on October 18, it was resolved to change the title to Gummiwerke Nordhausen A.-G. The original purpose of the company [see THE INDIA RUBBER WORLD, July 1, 1909—page 357] was to manufacture "Zakingummi" and other substitutes for rubber. The manufacture has since been taken on of mechanical rubber goods in general, for which a special factory was erected during the summer and is now in operation. The official board of the company is unchanged.

Regarding the Frankfurter Gummiwaren-Fabrik A.-G., in liquidation [which must not be confused with the Gummiwerken-Frankfurt A.-G.—see THE INDIA RUBBER WORLD, October 1, 1910, page 21], a compulsory administration has been declared, on the petition of the Allgemeinen Deutschen Kreditanstalt in Leipzig. The court appointed as administrator Herr Otto Oloff, former director of the rubber works and liquidator under legal proceedings already had.

It has been recorded in the German mercantile register by the firm Vereinigte Berlin-Frankfurter Gummiwaren-Fabriken, with headquarters in Berlin and a branch at Gross-Lichterfelde under the title Vereinigte Berlin-Frankfurter Gummiwaren-Fabriken branch, formerly Aktien-Gesellschaft für Fabrikation Technischer Gummiwaren C. Schwanitz & Co., that Eduard Brendle, of Triberg, now in Heidelberg, is no longer a member of the board of directors.

Charles Archibald Proctor, of Frankfort o/M., has been appointed a member of the board of The Dunlop Pneumatic Tyre Co., A.-G., of Hanau, with authority to represent the company, with another member of the board, or another procurator.

The title of Kommerzienrat has been conferred upon Herr Adolf Bensinger, director of the Rheinische Gummi- und Celluloid-Fabrik A.-G., of Mannheim-Neckarau.

On account of the retirement of Henri Felix Herrmann, the firm known hitherto as Linke, Hermann & Co., rubber goods manufacturers at Zittau, in Saxony, will trade as Linke & Co., G. m. b. H.

DUNLOP TIRES FOR KING GEORGE.

THE chairman of the Dunlop Pneumatic Tyre Co., Limited, announces to the company's employés: "It is with the utmost pleasure I have to inform you that His Gracious Ma-

jesty King George V. has been pleased to command that this company be appointed manufacturers of motor car tires to His Majesty."

It is stated that the Dunlop Pneumatic Tyre Co., Limited, have in their possession a set of brougham wheels fitted with the original Thomson tires, made under the patent of 1845.

BRITISH NORTH RUBBER PRIZES AT BRUSSELS.

THE North British Rubber Co., Limited (Edinburgh), for their exhibit of cycle, motorcycle and motor tires at the International Exhibition at Brussels were awarded the *grand prix* (the highest possible award). In addition to tires, the company made exhibits of their other manufactures of rubber, for which awards were made as follows:

Belting, *grand prix*.
Aeroplane fabric, silver medal.
Hose, etc., diploma of honor.
Rubber overshoes, *grand prix*.
Traveling requisites, *grand prix*.

The North British Rubber Co., Limited (Edinburgh), operate what is claimed to be the largest and most powerful hydraulic vulcanizing press in Europe. It was manufactured by Bertrams, Limited, of St. Katherine's Works, Edinburgh.

GOOD SHOWING MADE BY TIRES.

THE second international road race for the Grand Prize—a \$5,000 gold cup of the Automobile Club of America, at Savannah, on November 12, was notable for many reasons. The 15 machines contesting represented eight leading makers in the United States and Europe, and the drivers were among the best known and most successful on the two continents. Every condition was favorable, it seems, and a new record for road racing was established. The winner covered the 415.2-mile course in 5 hours 53 minutes 5.35 seconds, or at an average of 70.55 miles per hour, and the second contestant was less than 1½ seconds behind. Much faster time was made here and there during the race, one car covering the course once at the rate of 76 miles per hour. Several "laps" were covered by the leaders in the race at the rate of 74 miles an hour.

Good as the cars were, however, and skillful as were the drivers, it would seem that the honors belong to the tire makers represented. Of the 15 cars entered only six scored at the finish, the other nine having fallen by the wayside or been withdrawn for one reason or another. There were broken crank shafts, mishaps due to broken chains, cracked cylinders, and the like, but no report attributes one of these breakdowns to any tire trouble. It is true that trouble with tires was experienced, but not to the extent of interfering with the race.

The winner, Bruce-Brown, in a Benz car, on the fourteenth of the 24 laps stopped to change one tire, and the second, Hemery, also in a Benz car, changed two tires at the end of the ninth lap. The worst showing in the matter of tires was on the Buick car, driven by Burman, who had to make eleven tire changes, but this did not prevent his coming out third in the race, in 6 hours 11 minutes 23.5 seconds—or better than the previous American record. Any other troubles with tires evidently were not regarded by the reporters present as worth mentioning.

The score at the finish was:

No.	Car.	Driver.	Time.
1.....	Benz	Bruce-Brown	353m. 05s.
2.....	Benz	Hemery	353m. 06s.
3.....	Buick	Burman	371m. 23s.
4.....	Lozier	Mulford	386m. 12s.
5.....	Lozier	Moran	390m. 02s.
6.....	Marmon	Harroun	390m. 22s.

The tire makers were not so generally represented as in some former events, all the cars mentioned here having been equipped from the same rubber factory.

Official India-Rubber Statistics.

For the United States Fiscal Year Ended June 30, 1910

INDIA RUBBER.

I.—Imports of Crude India-Rubber, by Countries.

FROM	Pounds.	Value.
<i>Europe:</i>		
Belgium	3,813,702	\$4,482,705
France	3,695,703	4,240,614
Germany	6,528,147	6,365,680
Netherlands	92,476	99,550
Portugal	1,996,530	1,469,733
United Kingdom	15,556,981	20,481,961
Total	31,683,539	\$37,140,243

<i>North America:</i>		
British Honduras	13,162	\$13,162
Canada	7,954	8,314
Costa Rica	134,480	101,384
Guatemala	170,341	78,878
Honduras	148,813	117,808
Nicaragua	552,621	418,096
Panama	375,312	279,455
Salvador	29,720	13,909
Mexico	23,486,384	10,918,104
British West Indies	1,071	569
Cuba	2,806	2,439
Total	24,922,664	\$11,952,118

<i>South America:</i>		
Brazil	39,510,920	\$47,321,181
Chile	4,766	6,082
Colombia	678,265	508,244
Ecuador	928,253	748,789
Dutch Guiana	4,725	4,811
Peru	492,878	469,816
Venezuela	394,796	511,057
Total	42,014,603	\$49,569,980

<i>Asia:</i>		
British India	23,714	\$18,862
Straits Settlements	1,277,816	620,846
Other British Indies	1,100,737	1,757,384
Dutch East Indies	17,689	13,846
Total	2,419,956	\$2,410,938

<i>Oceania:</i>		
Australia and Tasmania	60	\$56
Philippine Islands	99	29
Total	159	\$85

<i>Africa:</i>		
British East	3,760	\$5,461
GRAND TOTAL	101,044,681	\$101,078,825

Total, 1908-09	88,359,895	\$61,709,723
Total, 1907-08	62,233,160	36,613,185
Total, 1906-07	76,963,838	58,919,931
Total, 1905-06	57,844,345	45,114,450

II.—Imports of Crude India-Rubber, by Customs Districts.

AT	Pounds.	Value.
Baltimore	11,143	\$9,472
Boston	988,983	661,543
New York	89,318,350	95,389,215
Philadelphia	2,425	3,270
Galveston	301	179
Mobile	2,190	1,426
New Orleans	324,212	259,751
Arizona	50	35
Corpus Christi	109,216	54,022
Paso del Norte	70	29
Saluria	10,200,390	4,624,918
Puget Sound	100	58
San Francisco	78,644	66,128
Chicago	248	255
Detroit	1,820	952
Minnesota	60	98
Niagara	6,455	7,456
Vermont	24	27
Total	101,044,681	\$101,078,825

III.—Imports of Manufactures of India-Rubber, by Countries.

FROM—	Value
Austria-Hungary	\$32,347—
Belgium	38,400—
Denmark	45 +
France	115,117—
Germany	543,391—
Italy	3,945—
Netherlands	501 +
Norway	2,713 +
Russia in Europe	7,801—
Spain	228—

Sweden	1
Switzerland	394—
Turkey in Europe	10—
United Kingdom	404,907 +
Bermuda	29
Canada	2,684 +
Mexico	45
British West Indies	150—
Cuba	140—
Brazil	9
Straits Settlements	141
Dutch East Indies	499
Hong Kong	150—
Japan	656 +
Australia and Tasmania	44

Total \$1,154,347

Total, 1908-09	\$1,391,770 +
Total, 1907-08	1,956,590
Total, 1906-07	2,262,783
Total, 1905-06	1,992,413

IV.—Imports of Manufactures of India-Rubber, by Customs Districts.

AT	Value.
Baltimore	\$30,583
Bangor	100
Boston	162,803
Fall River	7,263
Georgetown, D. C.	241
Newark	947
Newport News	3,335
New York	828,858
Philadelphia	18,559
Porto Rico	1,630
Providence	1,369
Galveston	2,667
New Orleans	5,773
Tampa	270
Hawaii	1,068
Los Angeles	337
Puget Sound	3,041
San Diego	1,087
San Francisco	10,244
Willamette	954
Buffalo Creek	804
Champlain	495
Chicago	36,668
Cuyahoga	1,642
Detroit	1,205
Genesee	2,231
Huron	200
Miami	2,224
Milwaukee	813
Minnesota	921
Niagara	137
Oswego	223
Vermont	383
Cincinnati	7,192
Columbus	129
Dayton	193
Denver	7,752
Grand Rapids	162
Indianapolis	111
Kansas City	369
Pittsburgh	1,033
St. Louis	7,487
Syracuse	204
Other ports	629
Total	\$1,154,347

V.—Exports of Manufactures of India-Rubber (and Gutta-Percha), by Customs Districts.

FROM	Belting, Packing, and Hose.	Boots and Shoes.	All other Rubber.
Baltimore	\$632	\$...	\$6
Bangor	4,770	622	2,266
Boston	27,959	670,060	403,306
Barnswick	6	...	...
New Bedford	94	...	...
New York	1,236,150	1,164,727	3,259,236
Passamaquoddy	2,016	...	1,317
Perth Amboy	48	...	16
Philadelphia	36,569	104	3,483
Portland and Falmouth .....	...	15	...
St. Johns .....	...	...	5
Galveston	138	...	74
Key West	23	...	119
Mobile	72	...	256
New Orleans	10,364	764	13,419
Sabine	59	...	...
Tampa .....	...	...	10
Arizona	62,445	148	9,331
Brazas de Santiago	9	...	28
Corpus Christi	31,677	374	93,121
Paso del Norte	58,917	105	2,857
Saluria	36,494	...	10,308
Alaska	20,620	25,273	1,269

Hawaii	4	...	...
Los Angeles	10	1	147
Puget Sound	18,633	12,809	65,607
San Diego	278	194	371
San Francisco	195,249	8,733	102,575
Buffalo Creek	39,897	...	167,989
Cape Vincent .....	...	...	893
Champlain	276	...	117,053
Cuyahoga	275	...	...
Detroit	35,562	7,809	105,088
Duluth	1,262	228	...
Huron	1,756	74	11,390
Memphremagog	23,975	46,276	158,296
Michigan .....	...	5	...
Minnesota	5,968	...	43,139
Montana and Idaho .....	...	...	...
Niagara	3,389	59	1,721
North and South Dakota	67,230	2,621	319,746
Oswegatchie	23,048	2,258	27,211
Superior	6,377	60	46,916
Vermont	406	143	103
...	4,272	41,273	146,663
Total	\$1,960,825	\$1,984,739	\$5,115,331

GUTTA-PERCHA.

I.—Imports of Crude Gutta-Percha, by Countries.

FROM—	Pounds.	Value.
France	1,766	\$1,779
Germany	320,173	121,987
Netherlands	60	24
United Kingdom	141,649	15,744
Canada	6,000	788
Panama	17,757	7,711
Mexico	885	204
Colombia	1,445	434
British East Indies	294,766	19,202
Total	784,501	\$167,873

Total, 1908-09	255,559	\$82,136
Total, 1907-08	188,610	100,305
Total, 1906-07	546,890	201,339
Total, 1905-06	500,770	188,161
Total, 1904-05	665,217	210,188

[NOTE.—The imports of Gutta-Percha credited to American countries are undoubtedly Balata.]

GUTTA-JELUTONG (POULANAK).

FROM—	Pounds.	Value.
United Kingdom	539,721	\$25,668
Straits Settlements	51,828,083	2,392,110
Dutch East Indies	24,640	1,445
Total	52,392,444	\$2,419,223
Total, 1908-09	24,826,296	\$852,372
Total, 1907-08	22,803,303	1,039,776
Total, 1906-07	28,437,660	1,085,098
Total, 1905-06	21,390,116	733,074
Total, 1904-05	19,104,911	641,319
Total, 1903-04	14,887,416	...
Total, 1902-03	13,084,817	...
Total, 1901-02	16,850,821	...
Total, 1900-01	9,371,087	...

BALATA.

FROM—	Pounds.	Value.
United Kingdom	4,099	\$3,768
Panama	2,877	1,457
British West Indies	91,964	38,094
Colombia	2,681	795
British Guiana	154,543	85,337
Dutch Guiana	59,619	31,884
French Guiana	470	282
Venezuela	82,780	35,261
Total	399,003	\$196,878
Total, 1908-09	1,157,018	\$522,872
Total, 1907-08	584,582	276,756
Total, 1906-07	799,201	305,041
Total, 1905-06	374,220	152,689

II.—Value of Imports of Manufactures of Gutta-Percha, by Countries.

FROM—	Value.
Belgium .....	...
France .....	...
Germany .....	...
United Kingdom	37,614
Canada .....	...
Mexico .....	...
Total	\$80,567

SCRAP RUBBER.

I.—Quantity and Value of Imports, by Countries.

From—	Pounds.	Value.
Austria-Hungary	144,768	\$9,470
Belgium	646,370	46,783
Denmark	47,099	4,099
France	563,544	51,302
Germany	4,754,171	371,465
Italy	5,781,490	483,307
Netherlands	1,135,085	75,117
Norway	133,809	38,472
Russia in Europe	8,880,562	792,438
Spain	24,802	1,661
Sweden	2,063,946	158,714
Switzerland	129,085	8,884
Turkey in Europe	731,211	62,537
United Kingdom	6,249,607	416,481
Bermuda	110	51
Canada	4,864,003	406,550
Newfoundland	76,283	6,683
Panama	6,494	419
Mexico	107,273	6,299
British West Indies	147,327	15,815
Cuba	120,559	9,670
Chile	3,410	471
Colombia	1,983	222
British Guiana	472	13
Chinese Empire	100,339	16,393
Hongkong	144,267	6,592
Japan	83	4
Russia, Asiatic	54,400	5,603
Turkey in Asia	22,679	1,800
Australia and Tasmania	21,202	922
New Zealand	1,972	183
Egypt	913	50
Total	37,364,671	\$2,998,697
Total, 1908-09	20,497,695	\$1,543,267
Total, 1907-08	16,331,035	1,496,822
Total, 1906-07	29,335,193	2,608,987
Total, 1905-06	24,756,486	1,721,678
Total, 1904-05	15,575,214	953,439

II.—Quantity and Value of Exports, by Countries.

To—	Pounds.	Value.
Austria-Hungary	9,206	\$1,250
Belgium	157,762	7,460
Denmark	24,094	3,508
France	460,744	50,307
Germany	705,423	91,643
Italy	34,944	5,358
Netherlands	87,020	15,559
Norway	34,060	3,533
Sweden	39,799	4,122
United Kingdom	2,265,669	194,699
Canada	2,311,085	199,144
Haiti	284	60
Japan	13,520	2,301
Total	6,143,610	\$578,944
Total, 1908-09	4,071,795	\$402,897
Total, 1907-08	4,255,789	449,727
Total, 1906-07	4,756,621	548,695
Total, 1905-06	a	339,507
Total, 1904-05	a	204,945

III.—Quantity and Value of Exports, by Customs Districts.

From—	Pounds.	Value.
Baltimore, Md.	46,078	\$6,321
Bangor, Me.	2,420	128
Boston	147,851	6,853
New York	3,001,514	328,320
Philadelphia	623,607	36,005
San Francisco	13,520	2,301
Buffalo Creek, N. Y.	672,877	47,528
Champlain, N. Y.	107,784	9,150
Detroit, Mich.	160,058	14,699
Huron, Mich.	775,170	73,618
Memphremagog, Vt.	91,286	9,143
Niagara, N. Y.	254,379	21,854
North and South Dakota ..		
Vermont	247,066	23,024
Total	6,143,610	\$578,944

RECLAIMED RUBBER.

I.—Quality and Value of Exports, by Countries.

To—	Pounds.	Value.
Belgium	95,608	\$17,150
France	335,221	41,550
Germany	312,258	48,681
Italy	141,760	20,495
Netherlands	22,249	4,408
United Kingdom	1,063,094	141,944
Canada	1,553,259	247,173
Japan	82,655	11,656
Australia	16,452	2,738
Total	3,622,556	\$535,795
Total, 1908-09	3,196,551	\$414,861
Total, 1907-08	2,947,974	418,738
Total, 1906-07	4,550,788	665,109
Total, 1905-06	4,084,696	511,843
Total, 1904-05	a	522,902

II.—Quality and Value of Exports, by Customs Districts.

From—	Pounds.	Value.
Boston	75,416	\$11,652
New York	931,372	115,735
Philadelphia	1,037,343	157,390
San Francisco	20,617	3,445
Buffalo Creek, N. Y.	334,689	51,774
Champlain, N. Y.	305,054	48,124
Detroit, Mich.	8,074	1,166
Huron, Mich.	55,459	7,335
Memphremagog, Vt.	321,718	61,231
Niagara, N. Y.	472,999	69,926
North and South Dakota ..	4,549	400
Vermont	55,266	7,617
Total	3,622,556	\$535,795

EXPORTS OF AMERICAN RUBBER GOODS, FISCAL YEAR ENDED JUNE 30, 1910.

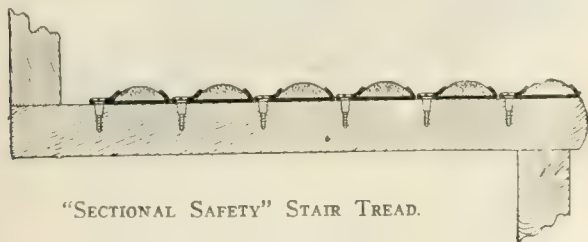
EXPORTED TO—	Belting, Packing and Hose.	Boots and Shoes.	Other Goods.	Total.
	Pairs.	Value.	Value.	Value.
EUROPE:				
Austria-Hungary	\$3,265	45,239	\$24,173	\$10,798
Azores and Madeira				
Islands	116	153	249	675
Belgium	14,616	231,956	108,064	109,066
Denmark	12,285	31,669	16,840	25,312
France	1,641	47,583	28,067	168,718
Germany	40,042	491,126	262,983	410,678
Greece	18	211	98	200
Italy	3,804	135,395	73,530	53,230
Netherlands	4,920	9,156	3,954	47,917
Norway	5,380	28,001	14,632	3,807
Portugal	43	1,560	1,124	738
Roumania		2,355	1,775	
Russia in Europe	1,934	605	510	20,806
Spain	1,111	42,702	24,021	10,060
Sweden	2,479	20,607	10,187	11,190
Switzerland	2,111	77,848	38,529	5,043
Turkey in Europe	905	401,642	202,442	387
United Kingdom—				
England	202,174	1,254,790	614,163	1,887,214
Scotland	10,065	126,984	58,384	24,402
Ireland	78	2,596	1,076	1,022
Total, Europe	\$306,987	2,952,178	\$1,484,801	\$2,791,263
North America:				
Bermuda	\$479	821	\$493	\$1,725
British Honduras	607	28	56	389
Canada	271,100	230,934	146,432	1,148,372
Newfoundland and Labrador	24,879	37,692	22,536	5,637
Costa Rica	10,485	1,078	946	8,237
Guatemala	4,178	810	430	4,171
Honduras	3,256	146	234	2,055
Nicaragua	3,727	141	162	4,440
Panama	130,320	787	1,304	58,799
Salvador	4,645	72	34	8,662
Mexico	406,463	1,846	2,166	224,289
Miquelon, Langley and St. Pierre Islands ..		413	496	
West Indies—				
British	6,647	800	542	16,916
Cuba	98,053	2,661	3,221	175,610
Danish	69	252	205	698
Dutch	300	168	95	1,006
French	38			236
Haiti	1,272	102	116	2,795
Santo Domingo	4,827	157	153	5,802
Total, North America	\$971,375	278,908	\$179,621	\$1,669,839

SOUTH AMERICA:				
Argentina	\$43,577	16,829	\$10,950	\$59,861
Bolivia	356			1,005
Brazil	17,470	36,969	20,785	66,890
Chile	37,701	2,781	3,083	29,472
Colombia	4,616	1,226	850	9,530
Ecuador	11,704	386	232	4,735
Guiana—British	2,008	3,951	1,973	2,919
Dutch	156			484
French				27
Peru	26,614	2,160	1,450	8,381
Uruguay	862	10,472	8,243	19,784
Venezuela	5,515	361	195	9,087
Total, South America	\$150,579	75,135	\$47,761	\$212,175
ASIA:				
Chinese Empire	\$12,265	385	\$447	\$7,125
British India	11,967	719	592	6,290
Straits Settlements	893	36	86	1,148
Other British	180	169	55	12
Dutch East Indies	684			1,688
Hongkong	2,231	2,132	852	2,011
Japan	35,561	50,364	27,211	126,403
Korea	2,759	208	208	962
Siam	423			149
Turkey in Asia	10	22,862	12,026	761
Total, Asia	\$66,973	76,875	\$41,477	\$146,549
OCEANIA:				
Australia and Tasmania	\$127,446	354,623	\$177,924	\$101,039
New Zealand	21,241	28,633	27,643	67,348
Other British		413	237	8
French Oceania	575	5,067	4,397	2,176
German Oceania	46			26
Philippine Islands	52,680	3,812	3,849	99,528
Total, Oceania	\$201,988	392,548	\$214,050	\$270,125
AFRICA:				
British, East	\$33			\$33
British, South	114,736	14,600	\$16,649	\$21,489
French Africa				400
Liberia				191
Portuguese Africa	148,110	360	212	3,231
Turkey in Africa				
Egypt	44	480	168	69
Total, Africa	\$262,923	15,440	\$17,029	\$25,380
Grand Total, 1909-10	\$1,960,825	3,791,084	\$1,984,739	\$5,115,331
Grand Total, 1908-09	\$1,498,445	2,396,435	\$1,292,673	\$3,823,956
Grand Total, 1907-08	1,347,775	3,080,253	1,614,290	3,743,040
Grand Total, 1906-07	1,253,369	2,310,420	1,231,898	3,729,643
Grand Total, 1905-06	1,221,159	2,693,690	1,505,082	2,966,144
Grand Total, 1904-05	994,100	2,390,539	1,214,342	2,572,375
Grand Total, 1903-04	880,010	2,310,808	1,086,364	2,469,750
Grand Total, 1902-03	819,985	2,307,401	1,056,491	2,299,875
Grand Total, 1901-02	634,146	2,594,708	1,046,315	1,781,941
Grand Total, 1900-01	565,726	1,459,100	724,015	1,727,527

New Rubber Goods in the Market.

SECTIONAL SAFETY TREAD FOR STAIRS.

A NEW stair and floor tread suitable for use under a variety of conditions, besides having all the advantages of resiliency due to the use in it of rubber, is made in sectional form, which adds to the convenience of putting it in place. The illustration shows how this tread is applied in sectional strips to a wooden step. The rubber part is made of vulcanized rubber molded in strips and sprung into metal containers, through which screws pass into the wood, thus holding the tread securely in place. Another advantage of the sectional form is that it provides an easy and inexpensive means of repair, thereby econo-

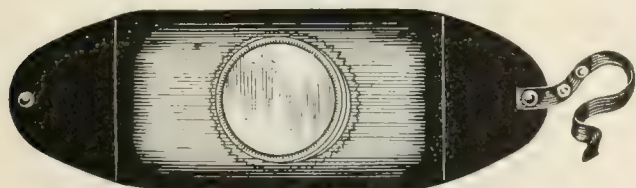


"SECTIONAL SAFETY" STAIR TREAD.

mizing on the maintenance to a degree not possible with any other tread on the market. The anti-slipping quality of the surface also commends this tread. This new tread has been installed on hospital floors, in billiard parlors, on the steps of elevated railway stations in New York, and at the Brooklyn bridge entrance, besides which many other illustrations of its use could be mentioned. Dealers will be supplied with samples on application. [Sectional Safety Tread Co., No. 1 Madison square, New York.]

THE "SED-A-TIV" BAG.

THIS is a bag or cap for the application of cold or hot water or ice to various portions of the body. It is available for treating local aches or pains—as a wrist bag in cases of fever or heat prostration; it can be filled with ice water and buttoned over the pulse to lower the temperature; it can be used to relieve



THE "SED-A-TIV" BAG.

headache or neuralgia, and it is useful in the treatment of spinal troubles. The strap furnished with the "Sed-A-Tiv" bag makes convenient its application to the base of the brain or to the face or ear. [The Vant Woud Rubber Co., No. 109 Worth street, New York.]

BELT BUCKLES OF HARD RUBBER.

ONE of the newest uses for rubber is in ladies' belt buckles. The buckle itself is made of the hard rubber, the larger one being the most fashionable. They are sometimes plain, but usually ornamented with black jet or beads in some dark color. The belt itself is often of elastic web, and also very dark in color.

THE PAINTERS' STRIPING WHEEL.

A DEVICE of exceptional convenience, for use in factories and shops where are constructed automobiles, carriages and other vehicles, as well as wheelbarrows, plows, and farm implements generally, and many kinds of machinery, is the Painters' and Decorators' Striping and Stencil Wheel. This device is available

for striping or ornamental design work, on any smooth surface, including iron, stone or wood. Walls, ceilings, and even signs can be striped and ornamented attractively by this substitute for the painter's brush. The method of operation is to fill the rubber bulb with the paint to be used, which is squeezed through the body of the device to the other end, where is mounted a small roll or wheel, which becomes covered with the paint through the pressure on the bulb. The application of this roll, or wheel, to the surface to be painted produces a uniform and accurate stripe



THE PAINTERS' STRIPING WHEEL.

—plain or ornamental, according to the design of the wheel. These wheels may be had in a great variety of designs, from a straight line of any width desired to ornamental designs, as desired. The bulb is of rubber, of course, as are also the striping wheels. This device is nickel plated, conveniently shaped for the hands, and costs from \$5.50 up. [Weber & Wenderhold, No. 50 Church street, New York.]

CREPE DE CHINE COAT FOR LADIES.

A NEW driving or motoring coat for ladies is of *crepe de chine* rubberized material, soft and clinging in effect, although very serviceable. The yoke and raglan cut sleeves are lined with heavy silk, adding much to the warmth and assuring an excellent fit. It has two good-sized patch pockets, and a close-fitting stand-



CREPE DE CHINE RUBBERIZED COAT

ing collar. A hood of the same material, shirred at the front and back, the silk fastened at either side by wide bows of the same material in the same color, makes a very chic costume. [Fox, Stiefel & Co., New York.]

THE "DELPHIN" LIFE SAVING APPARATUS.

A new life belt, made principally of rubber, is charged inside with means for the evolution of a gas, which inflates the belt almost instantly after the same comes in contact with water. This device is designed for use by private passengers, in the army and navy, by life saving corps, divers, and so on. Practical tests have been made of the "Delphin" belt by the authorities of the leading European governments, and it has been tested also in behalf of the American navy department. It is stated that the



THE "DELPHIN" LIFE SAVING APPARATUS.

[The complete outfit is shown in the center of the illustration, surrounded by detailed parts.]

Austrian government and the Italian war office have requested the inventor to devise a form of this belt for cavalry horses. The inventor is an Italian engineer, Signor Ingaramo, who has been awarded patents for it in most of the leading countries, and made applications for patents elsewhere. This gentleman has constituted Mr. Haberer, Dufourstrasse 181, Zürich, Switzerland, his attorney, with a view to forming a company for working this invention.

RICHARDSON'S PATENTED FELT BOOT.

THE combination boot of felt and rubber shown in the engraving here is not presented as new in principle. Nor is the application of the principle with which Mr. Richardson has to do particularly new. As a manufactured product, however, under his auspices, it is new, and by way of encouragement to one who has persisted so long in the building up of a business the article is shown here. At present the new factory is devoted to turning out felt alone. The boot is made seamless, with overlapping fold to buckle tightly around the leg. It is referred to as being adapted to any one buckle or two buckle perfection rubber made



RICHARDSON'S FELT BOOT.

by standard companies in the trade. [Webster Felt and Rubber Co., Webster, Massachusetts.]

A NEW AND PRACTICAL CHAUFFEUR'S COAT.

A LATE novelty for chauffeurs is a double-breasted, diagonally fastened rubber coat. It is very full, but not clumsy, and the diagonal fastening makes it impossible for rain or wind to enter.



MEN'S CHAUFFEUR COAT.

The sleeves have the usual elastic wind cuffs, and additional outside sleeve straps. There is a large pocket in the front on the inside, with openings at either side, making it easy of access. [Enterprise Rubber Co., Boston.]

In a report on the plantation rubber interest in Ceylon the New York *Herald* says: "In many cases this product has been planted among tea in bearing, which it is gradually killing out. Several Kalutara estates are planting up an extent of new land with tea equal to that in which the rubber has displaced the tea, a policy of insurance against the fall in price of rubber below the level of the cost of production, which it is to be hoped will prove unnecessary."

Recent Patents Relating to Rubber.

UNITED STATES OF AMERICA.

ISSUED OCTOBER 4, 1910.

- N**O. 971,516. Nozzle. [Fire hose.] I. K. Beaver, assignor of one-half to E. E. Straub both of Wilburton, Pa.
 971,557. Resilient wheel. [Comprises springs with or without rubber tread.] M. B. Pierson, assignor of one-half to H. Menly both of Corpus Christi, Tex.
 971,635. Automobile horn. A. V. Piskorski, Jersey City, N. J.
 971,742. Fountain pen. D. Gallagher, New York city.
 971,768. Attachment for automobiles. [Spare tire holder.] S. H. Martin, Webster Park, Mo.
 971,797. Pencil protector and retainer. J. P. Smythe, Longbeach, Cal.
 972,050. Tire inflating device. R. Barnfather, Croydon, England.
 972,080. Spare wheel for motor cars and the like. G. Huysmans, Brussels, Belgium.
 972,129. Tire ventilating device. D. Rawston, Chicago.

ISSUED OCTOBER 11, 1910.

- 972,199. Hatpin holder. E. A. Kochersperger, Brooklyn, N. Y.
 972,201. Syringe. [Vaginal.] J. Kussart, assignor to the Duplex Rubber Co.—all of Greeley, Colo.
 972,222. Hose reel. W. L. Paul, South Bend, Ind., assignor of one-half to H. T. Curtwright, St. Louis, Mo.
 972,224. Slapping glove. H. H. Pease, Port Williams, Wash.
 972,274. Emergency tire. W. S. Smith, Ossining, N. Y.
 972,280. Spring wheel. [With rubber tread.] J. Stallings, Fairmount, Ill.
 972,283. Resilient wheel. J. J. Stone and J. A. Simpson, Beresford, S. D.
 972,313. Golf ball. G. C. Worthington, Elyria, Ohio.
 972,322. Armor for automobile wheels. V. L. Békefi, Cleveland, Ohio.
 972,359. Rubber stamp. [With cushion.] C. C. Gibson, Buffalo, N. Y.
 972,372. Hose clamp. T. Harding, San Jose, Cal.
 972,485. Wheel. [With special rim for rubber tire.] L. K. Thorspeck, South Haven, Mich.
 972,541. Detachable wheel rim. G. E. Kipp, Niverville, N. Y.
 972,606. Vehicle wheel. [With tire in segmental sections.] A. E. Ellis, assignor to Steel Cushion Tire Co.—all of Boston.
 972,725. Construction of elastic wheels. J. Snyker, Amsterdam, Holland.
 972,734. Vehicle wheel. [With rubber tire.] G. H. Thomas, assignor to Thomas Resilient Wheel Co.—all of Elmira, N. Y.
 972,764. Tire. [Pneumatic, with special tread.] E. H. Herndon, assignor of one-half to R. H. Whitner—both of Sanford, Fla.
 972,766. Anti-skidding device for automobiles. A. Hornel, New York city.

Trade Mark.

- 51,491. Hood Rubber Co., Boston. A circular design. For rubber footwear.

ISSUED OCTOBER 18, 1910.

- 972,829. Hose coupling. [For airbrakes.] J. L. Crevelling, New York city, assignor to Safety Car Heating and Lighting Co.
 972,930. Vehicle wheel. [With rubber tire.] J. M. Selleck, Chicago.
 972,939. Vacuum pump. G. Staunton, Evanston, Ill.
 972,976. Blow out guard for inner tubes. G. C. Younggreen and J. C. Lof, Los Angeles, Cal.
 972,996. Rubber shoe. [Relates to the heel.] J. S. Capen, Stoughton, Mass.
 973,026. Elastic heel. [With plug insertion.] R. E. Foster and P. W. Pratt, assignors to Foster Rubber Co.—all of Boston.
 973,061. Smoothing apparatus for the manufacture of pneumatic tires. A. Mathern, Berlin, Germany.
 973,077. Boot and shoe. [Comprising a flexible support for the hollow of the foot.] H. H. Schwartz, Boston.
 973,162. Tire retaining flange for wheel rims. R. S. Bryant, Columbus, Ohio, assignor to the United Rim Co., Akron.
 973,245. Resilient tire. D. A. York, Northgrove, Ind.
 973,249. Vehicle wheel. C. H. Bailey, North Troy, N. Y.
 973,278. Tire. [Pneumatic, with special rim.] I. B. Kempshall, Boston.
 973,329. Automobile tire trunk. S. Wohlfeld, Philadelphia.

ISSUED OCTOBER 25, 1910.

- 973,476. Portable vulcanizer. [For tire repairs.] G. W. Clough, Cleveland, Ohio.
 973,532. Hose clamp. M. P. McLaughlin, Wakefield, Mass., assignor of forty-five one-hundredths to H. C. McCarty, Williamsport, Pa.
 973,545. Tire protector. O. Neukirch, Cincinnati, Ohio.
 973,552. Horseshoe. H. Paar, assignor of one-fourth to M. Beard and J. W. Willis—all of Canton, Ohio and one-fourth to C. McGranahan, Chicago.
 973,569. Spring vehicle wheel. H. W. Schmidt, Detroit, Mich.
 973,769. Spring wheel. [With rubber tread.] A. J. Frogue, Kansas City, Mo., and M. A. Weber, La Crosse, Wis.
 973,781. Resilient tire. N. H. Hassel, Los Angeles, Cal.
 973,810. Hose holder. D. F. Regan, Los Angeles, Cal.
 973,976. Anti-skidding device. F. A. Ruff, Newark, N. J.
 973,999. Protective tread for pneumatic tires. C. E. Titus, Springfield, Mass.

Trade Marks.

- 51,388. W. S. Rothband & Co., Manchester, England. The letters W. S. R. M. For waterproof bed sheeting.

- 51,880. Barrett Mfg. Co., New York city. The word *Tropico*. For ready felt roofing.
 51,881. Barrett Mfg. Co., New York city. The word *Mexoid*. For ready felt roofing.
 51,919. New York Belting and Packing Co., Ltd., New York city. The word *Jubilee*. For hose of rubber and fabric.

[NOTE.—Printed copies of specifications of United States patents may be obtained from THE INDIA RUBBER WORLD office at 10 cents each, postpaid.]

GREAT BRITAIN AND IRELAND.

PATENT SPECIFICATIONS PUBLISHED.

The number given is that assigned to the Patent at the filing of the application, which in the case of those listed below was in 1909.

*Denotes Patents for American Inventors.

- [ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, OCTOBER 5, 1910.]
 *13,561 (1909). Spring wheel with rubber tread. A. J. Boulton, London. (A. E. Ellis, Boston, Massachusetts.)
 13,570 (1909). Elimination of foreign matter from raw rubber, by the use of alkaline substances. Kautschukgesellschaft Schon & Co., Hamburg ad Elbe, Germany.
 13,644 (1909). Tool for removing and replacing pneumatic tires. L. F. Carle, Courbevoie, France.
 13,650 (1909). Pneumatic sock with rubber air chamber. A. Perez-Ibanez, Madrid, Spain.
 13,815 (1909). Wheel with two or more tires side by side, for skates and the like. W. Payne and J. T. Mazey, Coventry.
 *13,837 (1909). Vulcanizing mold for tires. J. K. Williams, Akron, Ohio.
 13,841 (1909). Detail of rim for pneumatic tire. V. Dausse, Paris, France.
 *13,850 (1909). Tire inner tube composed partially of elastic woven fabric. W. F. Murphy, Richmond, New York.
 13,876 (1909). Speaking tube with call whistle worked by means of a bulb. F. T. Jackson, Coventry.
 *13,944 (1909). Pneumatic tire with metallic non-skidding appliance. G. A. Lyon, Philadelphia, Pennsylvania.
 13,963 (1909). Spring wheel with inflated cushion at the hub and rubber tire tread. D. Levy, London.
 *14,042 (1909). Valve for use in pneumatic tire comprising a series of independent air chambers communicating with a common inflating conduit. D. McArthur and I. I. MacIntosh, Jersey City, New Jersey.

- [ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, OCTOBER 12, 1910.]
 14,298 (1909). Detachable rubber heel. O. V. Forbes, London.
 14,299 (1909). Detachable rubber heel. O. V. Forbes, London.
 14,348 (1909). Manufacture of tennis balls. Rubber Patents, Ltd., J. Turner, and A. Buxton, Manchester.
 14,349 (1909). Plug of gutta-percha or gutta-percha composition to stop holes in rubber balls. Rubber Patents, Ltd., J. Turner, and A. Buxton, Manchester.
 14,350 (1909). Reinforced air tube for pneumatic tire. A. H. Binyon, Slough, Buckinghamshire.
 14,421 (1909). Wheel with two rims side by side. A. Manson, Paris, France.
 14,546 (1909). Fabric foundation of pneumatic tire cover. H. Panzetta, Redhill, Surrey, and W. Truscott, London.
 14,550 (1909). Wheel with two rims side by side. A. Manson, Paris, France.
 14,783 (1909). Solid rubber tire secured by detachable side flanges on a binding tire of metal. R. Reid, Glasgow.
 14,806 (1909). Hair curler. Merckham Trading Co., and W. F. Freeman, London.

- [ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, OCTOBER 19, 1910.]
 14,870 (1909). Emergency rim adapted to fit over a damaged tire. R. E. Beddow, Bristol.

- *15,074 (1909). Pneumatic tire having an air chamber consisting of inner and outer rubber tubes with an intermediate layer of fabric. M. Culmore, Houston, Texas.
 15,132 (1909). Railway or motor car wheel formed of two metallic parts separated by a cushion of rubber. D. J. Games, Crickhowell, Breconshire.
 15,238 (1909). Tire comprising an elastic rubber tape helically coiled upon a central resilient core, with a fabric-lined jacket. W. Phillips, Manchester.
 15,299 (1909). Artificial caoutchouc. R. W. Wallace and G. A. Morton, London.

- [ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, OCTOBER 26, 1910.]
 15,568 (1909). Non-skid device for pneumatic tires. A. E. J. Smith and "Never Skid" Band Mfg. Co., London.
 15,640 (1909). Air tube for pneumatic tire reinforced with fabrics. A. Spencer, London.
 15,724 (1909). Tread band for pneumatic or solid tire. C. F. C. Morris, London.
 15,750 (1909). Air tube for pneumatic tire reinforced with fabric. A. Gough, London.
 15,817 (1909). Spring wheel with pneumatic cushion between rigid rims. C. F. M. Abbott Brown, London.
 15,819 (1909). Heel protector. H. Fenton, Sydney, Australia.

THE FRENCH REPUBLIC.

PATENTS ISSUED (with Dates of Application).

- 414,878 (April 16, 1910). G. Metcalf. Non-perforable substance for pneumatic and other tires and its process of manufacture.
- 414,616 (Feb. 25). E. Faure. Pneumatic headgear, for protection against shocks.
- 414,600 (Feb. 26). Niedergang. Shoe with flexible and imperforable bellows-sole, to the heel.
- 414,893 (April 12). L. Garnier and R. Raymond. Elastic tire.
- 414,901 (April 18). F. H. de Lostalot. Elastic tire.
- 414,926 (April 19). J. Corwin. Anti skidding tire.
- 415,024 (July 1, 1909). C. L. A. Gaumy. Elastic tire.
- 415,069 (July 3). B. Demont. Flexible tire.
- 415,098 (April 14, 1910). R. J. Caldwell, Pfeumer, and the Pneumatic Syndicate, Ltd. Improvement applied to apparatus intended for the manufacture of an elastic, cellular, mossy and spongy substance for filling the tires of vehicle wheels, cushions and other similar objects.
- 415,177 (April 25). E. Benjamin. Process for regulating the modifications employed in the auto oxidation and polymerization of certain organic substances, caoutchouc, gutta-percha, lacquer colors and other similar products, crude and manufactured.
- 414,979 (March 14). M. Beyon and A. Millet. Application of caoutchouc in the manufacture of leather footwear.
- 415,155 (April 23). Société anonyme pour le Commerce et l'Industrie du Caoutchouc. Process and machine for the manufacture, mechanically, of caoutchouc balloons.

[NOTE.—Printed copies of specifications of French patents can be obtained from R. Robet, Ingenieur-Conseil, 16 avenue de Villier, Paris, at 50 cents each, postpaid.]

THE NEW "ESSEX" RUBBER MATS.

A NEW rubber rug, designed for elevators, railway depots, hotels, offices and public buildings, has been placed on the market by the Essex Rubber Co. (Trenton, New Jersey). It is made to take the place of perforated mats and other floor coverings, and is designed for hard and heavy service, and is well adapted for it. It is reversible and repairable, can be rolled up tight and stood on end without injury, and contains no cloth or other fabric to rot or break. It has a semi-invisible, non-corrosive, metallic reinforcement, thus making it practically indestructible.

In addition to the "Essex" rug, the same company are putting upon the market a switchboard mat, for use in front of such high-voltage electrical apparatus as is found usually in all modern central stations. This mat is inlaid in attractive colors and is without perforations. It affords a footing for the station men, impervious to moisture, and being free from metal or other conducting material, safeguards them from a current of electricity being grounded through their bodies. Some very large central stations have been equipped with it with most satisfactory results.

VACUUM DRYING OF CRUDE RUBBER.

OPINIONS still differ as to whether or not vacuum drying is superior to drying in hot air, yet it is certain that vacuum drying is winning more and more adherents on plantations and in factories. The vacuum drying is said by some to weaken the "nerve" of the rubber and to make it sticky, but this is the fault of the method of procedure and not of the system. The above depreciation of the rubber, according to J. B. Taylor, in *Tropical Life* [VI, No. 4], is caused by the needless overheating of the rubber, after the greater part of the moisture has been removed. Since it is impossible to remove the last 2 to 2½ per cent. moisture by hot air, it follows that this ought not to be attempted in the vacuum dryer. No trouble need then be apprehended of sticky and "nerveless" rubber. The use of the vacuum dryer calls for some practice and degree of intelligence. The drying should be watched through windows in the apparatus provided for the purpose, and stopped when two things are noticed, viz: a marked rise in temperature, and a cessation of the dropping of the condensed water from the condenser. Rubber dried in this manner is faultless and hardly oxidized at all. In author's opinion, vacuum drying is better than the hot air process.

F. J. MAYWALD.

MR. ALEXANDER BETHUNE.

THE objects of the Rubber Growers' Association, formed in London some three years ago, have been outlined already in these pages. Without doubt this organization has proved of great help in the development, upon a sound basis, of the business of producing rubber in Ceylon and Malaya, in which so much British capital has been invested, and in the marketing of the product. In *THE INDIA RUBBER WORLD*, November 1, 1907 (page 45), appeared a portrait and sketch of the first chairman of the Association, Mr. Henry Kerr Rutherford—a gentleman who was among the first to take up the culture of rubber as a promising field for investment, and whose continued interest in the subject is indicated by the large number of important and successful plantations in the Far East with which he is now connected.



ALEXANDER BETHUNE, J. P.

[Chairman of the Rubber Growers' Association.]

Here is presented a portrait of the present chairman of the Association, Mr. Alexander Bethune, J. P. Mr. Bethune is today a member of the boards of eleven rubber and tea plantation companies, and a member of the Produce committee of the Ceylon Association in London. Lately he departed for Africa, in connection with the important future program of the Mabira Forest (Uganda) Rubber Co., Limited, the success of which, in the application of scientific methods to the extraction of latex of *Funtumia elastica* has proved one of the most interesting developments in the forest rubber interest. Mr. Bethune, it is to be added, is a member of the Mabira Forest company's board.

Mr. Bethune for just eleven years has been the able correspondent in London of *The Times of Ceylon*, having never failed during this time to forward a weekly letter to his paper. The pressure of business alone has constrained him to give up the newspaper connection, in which he is succeeded by Mr. J. Cecil Cox.

THE United States consul at Aguascalientes (Mr. A. Donaldson Smith) reports that while there are no guayule rubber plants in the state of Aguascalientes, the whole northern part of Zacatecas abounds therewith, and that a rubber factory has been erected at the *hacienda* of San Nicolas in that state. The consul adds:

"If the destruction of the guayule plant continues at the present rate, it is generally predicted that in five years, unless success can be had from new plantings, the supply will be exhausted."

The Automobile and Tire Trades.

THE NOVEMBER LONDON SHOWS.

THE ninth annual International Motor Exhibition, held under the auspices of The Society of Motor Manufacturers and Traders, Limited, in connection with the Royal Automobile Club, and having for its patron his Majesty the King, was held this year as usual in the Olympia, London, the dates being November 4-12. Last year the Olympia show was the only important automobile exhibition held in Europe, and it was recognized to be the largest and best automobile show ever organized under one roof. This year the list of exhibitors was even larger—although other shows are to be held—representing more different makes of automobiles, tires, and other accessories than on the former occasion. For instance 139 makes of motor cars were on exhibition, as compared with 124 in the preceding year.

As usual at Olympia, the tire section was prominent, embracing very complete displays of the leading British manufacturers and of the foreign makes having representation in that country. The leading French and German tire firms had exhibits, and one of importance came from America—that of The B. F. Goodrich Co., of Akron, Ohio. There were 32 tire exhibits, compared with 27 last year. The tire exhibitors were:

The Calmon Asbestos and Rubber Works, Limited, London.
The Collier Tyre Co., Limited, London.
*J. W. & T. Connolly, Limited, London.
The Continental Tyre and Rubber Co. of Great Britain, Limited, London.
The Dunlop Pneumatic Tyre Co., Limited, London.
Etablissements Hutchinson, London.
Gaulois Tyres (1909), Limited, London.
The B. F. Goodrich Co., Limited, London.
Grose, Limited, Northampton.
The Kempshall Tyre Co. of Europe, Limited, London.
The K. T. New Pneumatic Tyre and Rubber Co., Limited, London.
J. Liversidge & Son, Limited, London.
The Michelin Tyre Co., Limited, London.
The Midland Rubber Co., Limited, Birmingham.
David Moseley & Sons, Limited, Manchester.
The New Motor and General Rubber Co., Limited, London.
The North British Rubber Co., Limited, Edinburgh.
Osborn & Co., Limited, London.
The Palmer Tyre, Limited, London.
The Peter Union Tyre Co., London.
*The Polack Tyre and Rubber Co., Limited, London.
*The Riley Cycle Co., Limited, Coventry.
*Rudge-Whitworth, Limited, Coventry.
Samson Tyres, Limited, London.
*Joseph Sankey & Sons, Limited, Bilston.
The Self-Sealing Rubber Co., Limited, Birmingham.
The Shrewsbury and Challiner Tyre Co., Limited, Manchester.
The Sirdar Rubber Co., Limited, London.
George Spencer, Moulton & Co., Limited, London.
*The Stepney Spare Motor Wheel, Limited, Llanely.
Torkington Tires, Limited, London.
Vieo, Limited, London.

[*Not exhibitors last year.]

[Avon India Rubber Co., Limited (Melksham), exhibitors last year, were not represented.]

A cycle show was held at Olympia immediately following the motor car show—on November 12-19. Toward the end of March a commercial vehicle show will be held at Olympia.

THE STANLEY SHOW.

At Royal Agricultural Hall, Islington, London, was held on November 11-19, the thirty-fourth annual Stanley Show, described this year as devoted to "cycles, motorcycles, motor vehicles, aeroplanes, and accessories." Originally it was a bicycle show alone, but while the bicycle in England still attracts visitors to a show, the newer inventions naturally share larger in the interest of the public. The tire makers were, as usual, much in evidence at the Stanley Show, most of them giving prominence to their

equipment for motorcycles, the popularity of which in England is constantly on the increase.

INTERNATIONAL AUTOMOBILE TRADE IN 1909.

THE official returns of values of imports and exports of automobiles by the leading countries for 1909 have been converted by *The Horseless Age* into terms of United States money, and from its figures the following table has been compiled:

EXPORTS.		IMPORTS.	
1908.	1909.	Country.	1908.
\$4,948,600	\$7,786,600	United States.	\$3,208,400
24,921,000	28,356,000	France	1,255,000
6,305,300	8,113,000	Great Britain.	19,304,400
4,485,700	7,495,500	Germany	2,745,500
5,624,000	4,719,000	Italy	955,000
781,000	833,300	Austria	2,228,000
2,224,000	2,337,000	Belgium	679,000
\$49,289,600	\$59,640,400	Totals....	\$30,375,300
			\$33,325,400

GROWTH OF THE GERMAN AUTOMOBILE TRADE.

THE figures in the following table, compiled from a German source, relate to the values of German imports and exports of automobiles and bicycles for the first six months of 1909 and 1910, the values being expressed in marks [1 mark = 23.8 cents]:

IMPORTS.	
	1909.
Automobiles (including chassis).....	M5,657,000
Motor trucks	314,000
Motorcycles	96,000
Bicycles, tricycles, etc.....	139,000
Iron parts of the latter.....	351,000
Total	M6,557,000

EXPORTS.	
	1909.
Automobiles (including chassis)	M8,289,000
Motor trucks	903,000
Motorcycles	808,000
Bicycles, tricycles, etc.....	4,584,000
Iron parts of the latter.....	31,659,000
Total	M46,243,000

BRITISH FOREIGN MOTOR AND CYCLE TRADE.

THE figures which follow are compiled from official statistics of the imports and exports of bicycles and automobiles and parts thereof by Great Britain and Ireland, during five calendar years past:

IMPORTS.	
	1905.
Bicycles	£13,617
Bicycle parts ..	116,871
Automobiles ...	2,438,002
Automobiles (chassis)....	929,121
Motorcycles.....	24,055
Motorcycle parts	30,371
Total	£3,521,666
U. S. money..	\$17,138,188

EXPORTS.	
	1905.
Bicycles	£47,838
Bicycle parts....	628,024
Automobiles ...	2,486,337
Automobiles (chassis)....	1,885,323
Motorcycles.....	2,472,520
Motorcycle parts	28,096
Total	£4,560,105
U. S. money..	\$22,191,751

IMPORTS.	
	1906.
Bicycles	£7,886
Bicycle parts ..	150,188
Automobiles ...	2,080,266
Automobiles (chassis)....	1,063,077
Motorcycles.....	1,659,832
Motorcycle parts	29,182
Total	£4,751,727
U. S. money..	\$23,124,279

EXPORTS.	
	1906.
Bicycles	£78,948
Bicycle parts....	709,113
Automobiles ...	2,080,266
Automobiles (chassis)....	1,063,077
Motorcycles.....	1,659,832
Motorcycle parts	29,182
Total	£4,297,828
U. S. money..	\$20,915,380

IMPORTS.	
	1907.
Bicycles	£5,259
Bicycle parts ..	165,586
Automobiles ...	1,389,552
Automobiles (chassis)....	1,063,077
Motorcycles.....	1,659,832
Motorcycle parts	29,182
Total	£4,522,673
U. S. money..	\$22,009,588

EXPORTS.	
	1907.
Bicycles	£102,399
Bicycle parts....	779,222
Automobiles ...	2,080,266
Automobiles (chassis)....	1,063,077
Motorcycles.....	1,659,832
Motorcycle parts	29,182
Total	£4,297,828
U. S. money..	\$20,915,380

IMPORTS.	
	1908.
Bicycles	£5,356
Bicycle parts ..	150,829
Automobiles ...	1,389,552
Automobiles (chassis)....	1,063,077
Motorcycles.....	1,659,832
Motorcycle parts	29,182
Total	£4,522,673
U. S. money..	\$22,009,588

EXPORTS.	
	1908.
Bicycles	£99,378
Bicycle parts....	957,957
Automobiles ...	2,080,266
Automobiles (chassis)....	1,063,077
Motorcycles.....	1,659,832
Motorcycle parts	29,182
Total	£4,297,828
U. S. money..	\$20,915,380

IMPORTS.	
	1909.
Bicycles	£3,710
Bicycle parts ..	172,938
Automobiles ...	1,223,053
Automobiles (chassis)....	1,321,596
Motorcycles.....	1,771,960
Motorcycle parts	29,416
Total	£4,522,673
U. S. money..	\$22,009,588

EXPORTS.	
	1909.
Bicycles	£105,135
Bicycle parts....	1,175,291
Automobiles ...	2,080,266
Automobiles (chassis)....	1,063,077
Motorcycles.....	1,659,832
Motorcycle parts	29,416
Total	£4,522,673
U. S. money..	\$22,009,588

The value of imports of motorcycles is not stated in the figures now available. It may be mentioned, however, that the number of these vehicles is reported officially as follows: 1,700 in 1905; 1,755 in 1906; 1,770 in 1907; 1,340 in 1908; and 1,442 in 1909.

The countries taking British bicycles have been, in the order of the number shipped, Japan, Holland, France, India, and so on. The imports of automobiles from France have largely exceeded those from any other country.

NEW USES FOR SMALL RUBBER TIRES.

ONE of the most up-to-date uses of small rubber tires is on carpet sweepers. Only one company has as yet substituted them for the ordinary wooden wheel, which slips, splinters as it becomes old, and is apt to be noisy. Needless to say, the rubber tired wheels are noiseless, and cannot slip.

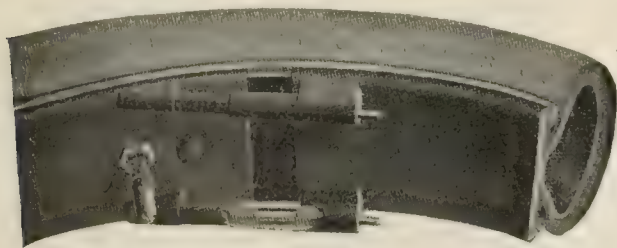
Child's cribs have also acquired them, and they are of good size, too, making it possible to move the crib from room to room, if desired, with no noise, and without scratching the floors.

They are found, too, on the movable dish and linen trays used so much in large hotels, where the question of "less noise" is such an important one. And as a caster they are indispensable, easily fitted to any piece of furniture, strongly built, and making the moving about of articles in a room a quiet matter.

Even in housebuilding the use of these little rubber tired wheels is valuable. For example, a new floor scraper has recently been patented, which is set upon rubber wheels. The two separate rollers of the scraper are set upon them in such a way that the tire is the only thing that comes in contact with the floor. It has been found that they add to the ease in handling, and do not scar the woodwork.

GOODYEAR DETACHABLE DEMOUNTABLE RIM.

THIS is new and consists mainly of four steel felloe bands, which are attached to the wheels of the automobile, and of five demountable rims—one for a spare for the tires. These rims are



GOODYEAR DETACHABLE DEMOUNTABLE RIM.

both clincher and quick detachable. The accompanying illustration pictures well the simplicity and ease with which the change of tire or rim is accomplished. [Goodyear Tire and Rubber Co., Akron, Ohio.]

HARTFORD'S PHILADELPHIA BRANCH BURNED.

THE Philadelphia branch of the Hartford Rubber Works Co. was completely burned out on the evening of November 3, destroying their stock in that city of automobile and bicycle tires. The fire started in an adjacent store. The company advise THE INDIA RUBBER WORLD that their aggregate loss was \$100,000, which is understood to have been fully covered by insurance. The company on the next morning secured temporary quarters

at No. 1334 Arch street, which were speedily equipped with a complete stock of fresh goods.

HARTFORD CLINCHER MOTORCYCLE TIRE.

IN designing the motorcycle tire illustrated herewith in section it has been borne in mind that no tire less strong in construction than the automobile tire would answer. This tire is a one cure, wrapped tread, the same as the automobile tire. The tread stock



HARTFORD MOTORCYCLE TIRE.

has been prepared with a view to giving a maximum of resiliency, combined with an exceptionally tough wearing surface. These tires are supplied with either plain or corrugated tread. [The Hartford Rubber Works Co., Hartford, Conn.]

SHAWMUT NON-SKID TIRE TREAD.

THE non-skid tread for automobile tires shown in the illustration differs from other non-skids in the peculiar angles in which the knobs are placed, and the raised strip all the way around the center of the tread. There are no pockets to hold dirt, or sharp



SHAWMUT "X-TRA" TREAD.

edges of rubber to wear off. This new design is called the "X-tra Tread" non-skid tire. [Shawmut Tire Co., No. 103 Bedford street, Boston.]

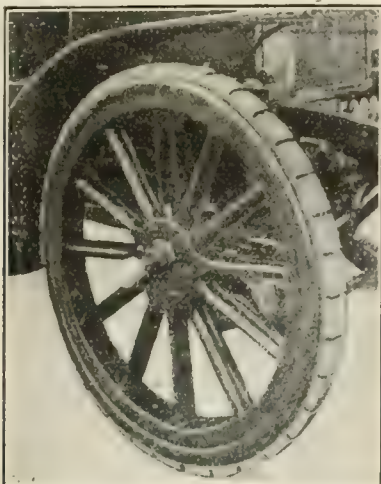
A BRITISHER ON AMERICAN TRADE.

IN an interview in *The Motor News* (Dublin), Mr. W. D. Forster-Coull, of an important British automobile manufacturing firm, after an extended tour of the United States, expresses the opinion that no extensive "invasion" of England by American firms need be feared; all their energies for some time to come will be necessary for meeting the home demand for cars. He considered the automobile more popular in the States than even

in Britain. He reported the manufacture of 157,000 cars in the United States during the past business season. In one factory, at Toledo, Ohio, he found orders in hand for 21,000 cars for the coming season, on each of which a deposit had been paid. In their stock room he saw tires valued at £32,000 [= \$155,728], and was told that some time before there had been a much greater supply. He saw no reason for expecting any "slump" in the American automobile trade.

CONTINENTAL SOLID TIRES.

THE Continental Tyre and Rubber Co. (Great Britain), Limited—the English branch of the Continental Caoutchouc-and Gutta-Percha-Cie., of Hanover, Germany—although active in the sale of pneumatic tires in Great Britain for some years past, have only recently introduced there the solid rubber tires which they



GROOVED ENDLESS GRIP TIRE.

[Made by the Continental Tyre and Rubber Co.]

have been selling so extensively on the continent. The Continental company have made Mr. A. C. Kahler manager of their solid tire branch in London, where he will with his staff occupy handsome new premises in the Brompton road.

GROWTH OF THE FORD BUSINESS.

THE Ford Motor Co. (Detroit, Michigan) have selected Fargo, North Dakota, as the location for their twenty-fifth branch house. While occupying now temporary premises, the company will build in Fargo a large warehouse, fitted for taking care of the growing automobile trade in North Dakota and South Dakota, which fact is an indication of the importance of this great agricultural region to the tire manufacturing trade. The Fargo branch will be in charge of Mr. C. F. Reynolds, formerly connected with the Ford interests in Chicago.

AUTOMOBILE STATISTICS FOR FRANCE.

OFFICIAL figures show that there were in use in France in 1909 no fewer than 44,769 motor cars, compared with only 1672 cars in 1899. Of this total 25,269 were touring cars and 19,500 "trade" cars. It was estimated that the purchase price of the 44,769 cars was £19,000,000 [= about \$95,000,000], and that the owners had spent another £16,000,000 on maintenance and repairs. French exports of cars have been 144,352,000 francs [= \$27,426,880] in 1907; 127,299,000 francs [= \$24,186,810] in 1908; and 146,615,000 francs [= \$27,856,850] in 1909. The indications are that the figures for 1910 will be still larger.

MOTOR VEHICLE TRAFFIC IN LONDON.

THE Motor Traction has had made annually for five years past a census of the traffic on certain much-traveled streets in London—choosing each year a business day in September—with a view to ascertaining the relative number of horse-drawn vehicles and motor vehicles passing during the nine busiest hours of

the day. Without going into details, it may be of interest to present this summary of our contemporary's annual censuses:

Year.	Motors.	Horse.	Total.
1906.....	632	5,310	5,942
1907.....	1,268	4,809	6,077
1908.....	1,496	5,118	6,614
1909.....	2,098	4,388	6,486
1910.....	2,662	3,716	6,378

FISK RUBBER CO. ENLARGEMENT.

THE Fisk Rubber Co. (Chicopee Falls, Massachusetts) have again found it necessary to add to their plant. The latest building is of steel and brick, 187 x 36 feet, and four stories high. An important addition is being made to their power plant, and it is estimated that they will be prepared to increase their production of tires about 40 per cent. It is expected that the new building will be completed and the machinery installed by January 15 next.

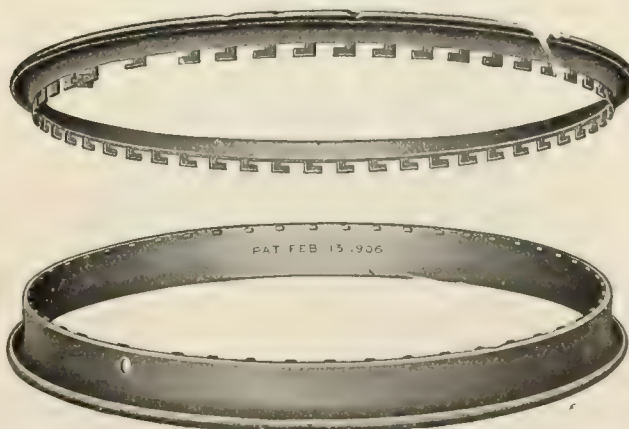
TIRE COMPANY BRANCHES.

THE Fisk Rubber Co. (Chicopee Falls, Massachusetts) are opening a branch in Hartford, in the Foster block, on Asylum street, in charge of G. H. Rockwell, who has been connected with the Fisk company for the past six years.

THE Firestone Tire and Rubber Co. (Akron, Ohio) are represented in Wichita, Kansas, by the Auto Tire and Supply Co., who are removing to a new building, constructed for their use, at Nos. 219-221 South Lawrence street.

THE Diamond Rubber Co. (Akron, Ohio) have opened a branch at Portland, Oregon, making four branches now maintained by them on the Pacific coast. The others are at Los Angeles, California—the headquarters of C. E. Mathewson, the company's Pacific coast manager—San Francisco, and Seattle. The Portland branch will be in charge of W. H. Gray, formerly branch manager at Seattle.

THE Hartford Rubber Works Co.'s branch in Atlanta, Georgia, under the management of A. W. Kirk, has been removed to more commodious premises, at No. 19 Houston street.



THE CONTINENTAL "Q. D." DEMOUNTABLE RIM.

[Adapted to Clincher, Q. D., and Dunlop tires; lighter than other rims; less number of parts; applied with the tool illustrated below. Made by Continental Caoutchouc Co., New York.]

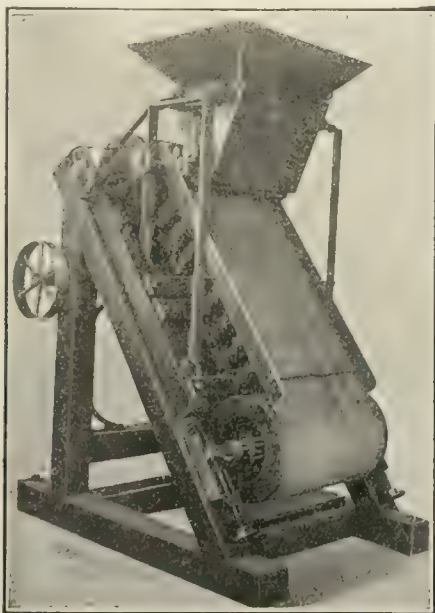


MAGNETIC RECLAIMING SEPARATORS.

ONE of the difficult problems in rubber reclaiming is to eliminate all iron. Overshoes contain it in the form of nails, buckles, stiffeners; tires in the form of tacks, nails, and bits of wire that have been picked up on the road, and so on. For chemical as well as mechanical reasons, every particle of this iron must be eliminated, in order to make the reclaimed material of any value.

In the process of reclaiming, the scrap is passed between rolls, which usually leaves the metal flattened into thin pieces. These were formerly removed by hand magnets in a laborious and imperfect way. Later machines were employed, but the problem has not been an easy one to solve, as most of the available machines were originally designed for treating heavy metals or finely crushed mineral ores, and such separators were not adapted for treating light, bulky rubber stock.

At the suggestion of an old time inventor and rubber expert the Dings Electro-Magnetic Separator Co. (Milwaukee), have built a magnetic separator for rubber work alone. This separator has proved to be a complete success. Its capacity is large, efficiency perfect, and does not occupy excessive floor space.



TYPE "C" MAGNETIC SEPARATOR.

[Made by Dings Electro-Magnetic Separator Co.]

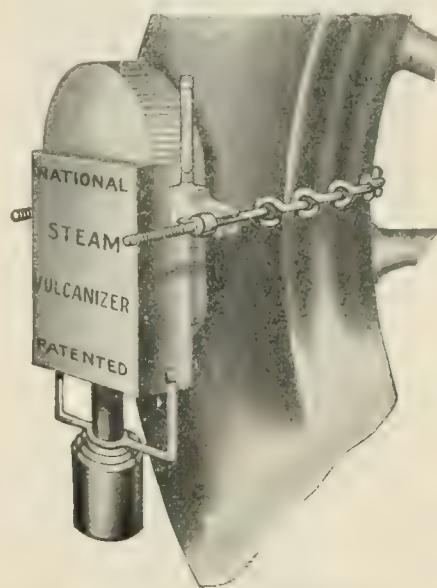
The cut shows a view of Type "C" separator, fully assembled, with the exceptions of a few parts. In operation, the material to be separated is fed from a Dings Universal Feeding Hopper, upon a wide inclined endless rubber belt traveling in an upward direction. Under this belt is placed a large magnetically energized surface, so that the material as it rolls and tumbles down the incline for a long distance is thoroughly subjected to magnetic influence, making it impossible for any particle of iron to escape. The iron is attracted and held firmly against the belt, and is thus carried upward and over the top of the pulley, when it is released and dropped into a box conveniently supported by brackets on the rear posts of the machine. The iron is released and discharged automatically without the aid of brushes, scrapers or cut outs, by reason of its gradual withdrawal from the magnetic field as it reaches the brow of the top pulley. The rubber, being nonmagnetic, falls from the belt to the final delivery at the bottom of the incline where it can be either shoveled, spouted, or conveyed away.

This separator can be ordered in any desired size from 20 to 60 inches in width of belt. The machine can be operated on any voltage that may be specified. The power required for the

mechanical drive is insignificant, being only $\frac{1}{4}$ HP. to 1 HP., according to size. The electric power required for the magnetic energy varies from $\frac{1}{2}$ to 2 kilowatts, according to size. The separator can be provided with tight and loose pulleys for belt drive, or with direct connected motor.

A CONVENIENT TIRE VULCANIZER.

THE "National" Steam Vulcanizer is constructed of a brass shell partially filled with water. When heat is applied, the water is formed into steam, thus making it on the same principle of the large steam vulcanizers used in tire factories. The steam eliminates the danger of burning the rubber. The heat is supplied by an alcohol lamp, with adjustable burner, which makes it possible to use the "National" in the country or anywhere. This vulcanizer has two vulcanizing surfaces, each $3\frac{1}{2} \times 5$ inches, and is adapted for repairing both tubes and casings. Cuts in



"NATIONAL" STEAM VULCANIZER.

casings can be repaired without removing them from the wheel. It requires about seven minutes to get up steam, and fifteen minutes to vulcanize. A thermometer gives the exact temperature at all times. The burner on the lamp is so arranged that it can be set so as to maintain a steady even heat for any length of time. The brass shell with water prevents the heat from fluctuating, and distributes the temperature evenly to all parts of the machine. The vulcanizer, with complete outfit of supplies, weighs less than four pounds, and can be carried in the tool box. [National Motor Supply Co., Cleveland, Ohio.]

INDIA-RUBBER GOODS IN COMMERCE.

EXPORTS FROM THE UNITED STATES.

OFFICIAL statement of the values of exports of manufactures of india-rubber and gutta-percha for the month of September, 1910, and for the first nine months of five calendar years:

MONTHS.	Belting, Packing and Hosc.	Boots and Shoes.	All Other Rubber.	TOTAL.
September, 1910 ...	\$161,212	\$316,466	\$460,120	\$937,798
January-August ...	1,431,382	1,347,749	3,798,848	6,577,979
Total, 1910	\$1,592,594	\$1,664,215	\$4,258,968	\$7,515,777
Total, 1909	1,301,497	1,127,806	3,059,146	5,488,449
Total, 1908	926,566	1,043,528	2,629,927	4,600,021
Total, 1907	1,051,903	1,213,992	2,997,815	5,263,710
Total, 1906	895,296	936,350	2,361,917	4,193,563



THE B. F. GOODRICH CO.'S NEW TIRE DEPOT MANAGERS.

THE RUBBER TRADE AT AKRON.

BY A RESIDENT CORRESPONDENT.

THE Goodyear Tire and Rubber Co. have under construction what will be the largest single factory building in Akron. One or perhaps two other rubber companies are building additions which together will exceed the new Goodyear building in size, but this will be the largest single building here. The new building, to be devoted to the manufacture of automobile tires, will be 400 x 146 feet, and six stories high, of reinforced concrete. Superintendent P. W. Litchfield says that from 1600 to 1800 men men will be employed in the building.

The Goodyear company are now operating their large power plant in the open air. Recently they completed the erection of a brick smokestack 250 feet high, and which is said to be the largest in the state. Now the Sterling Boiler Co. are installing for them six boilers of 700 H.P. each. It was necessary to set up the boilers before enlarging the power house; so the roof was torn off the old power house and for the time being the boilers are out of doors.

* * *

An important new departure of The B. F. Goodrich Co. is the establishment of a chain of rubber tire depots throughout the country, in cities in which they do not already maintain branches. These depots will each be in charge of experts trained by the company, and will serve as convenient centers for the repair of tires and for the adjustment of claims under guarantees. Liberal stocks will be carried, thus eliminating the necessity of local dealers carrying large stocks. The carrying out of this plan has been a matter of study for almost a year, and the managers of the twenty-seven depots left Akron during the past month for their new positions. The new depots will not sell tires to consumers, but are being established solely to benefit the dealers in their respective localities. The opening of the depots has been slated for December 1. An estimate which reaches THE INDIA RUBBER WORLD is that over \$550,000 worth of stock has been distributed among the depots.

The location of the depots is in the following cities: Brooklyn, Albany, Syracuse, and Rochester, New York; Newark, New Jersey; Portland, Maine; Providence, Rhode Island; Springfield, Massachusetts; Baltimore, Maryland; Washington, D. C.; Richmond, Virginia; Toledo, Columbus, and Dayton, Ohio; Saginaw and Grand Rapids, Michigan; Milwaukee, Wisconsin; Memphis, Tennessee; New Orleans, Louisiana; Jacksonville, Florida; Louisville, Kentucky; Des Moines, Iowa; Houston and San Antonio, Texas; Omaha, Nebraska; Salt Lake City, Utah; and Oklahoma City, Oklahoma.

The following young men have been placed in charge of the depots: C. S. Bower, C. A. Fassnacht, D. E. Wilcox, E. Strachle, T. C. Norris, B. A. Thurin, W. B. Aldefer, C. A. Breyler, K. K.

Kantzer, D. B. Jarvis, E. E. Rhoads, W. A. Gardner, C. E. Lindquist, G. H. Wood, W. H. Garner, O. A. Evans, E. H. Schwan, F. A. Schumacher, B. F. Morris, W. S. Rutherford, L. Woodward, J. D. Hotchkiss, N. J. Murray, F. Little, R. Hassler, G. P. Colman, and J. M. Dempsey.

THE Goodyear Tire and Rubber Co. of Canada, Limited, formed to manufacture automobile tires in Canada, to avoid the payment of the import duties of 35 per cent. *ad valorem* imposed under the Canadian tariff act of 1907, have acquired control of the factory at Bowmanville, Ontario, established originally by the Bowmanville Rubber Co., which was reorganized in 1898 as the Durham Rubber Co., Limited. The Durham company have been engaged in the manufacture of mechanical rubber goods and tires. The plant is being revised for continuing the manufacture of the same lines. Offices of the concern have been opened in Toronto.

In spite of the tariff there has been a considerable sale of American-made tires in Canada. Under the preferential trade relations with Great Britain, tires from the latter country are dutiable in Canada at only 22½ per cent. But during the last fiscal year Canada imported \$158,023 worth of American tires, and only \$32,517 worth from Great Britain.

* * *

THE Firestone Tire and Rubber Co. have put into effect a 10 per cent. reduction of the price on solid automobile tires. A statement given out at the office of the company declares the cut is made in line with a general solid motor truck tire reduction planned by Akron manufacturers.

The Goodyear Tire and Rubber Co. has also reduced the price of its solid rubber tires 10 per cent., and F. A. Seiberling, president of the company, declares prices of pneumatic automobile tires will be cut from 15 to 20 per cent. by January 1. "The drop in the crude rubber market," reads the Firestone company's statement, "which is bringing about a general readjustment of tire prices, is due to the refusal of American rubber manufacturers to buy at the recent inflated prices demanded by London speculators."

* * *

At the motor commercial car show to be held in Madison Square Garden, New York, the first of the year the Firestone Tire and Rubber Co. will exhibit something entirely new in solid truck tires, a demountable rim tire. The Diamond Rubber Co. will have a new spliceless solid tire on exhibition.

* * *

SHAREHOLDERS of the Royal Rubber Co. have voted to adopt the recommendation of the directors and increase the capital stock of the company from \$50,000 to \$200,000. They made pro-

vision for enlarging the operations of the company in the factory of the old Buckeye Mower and Reaper Co., which building the Royal company have purchased. Experiments are being conducted with pneumatic tires, which the company expect to manufacture.

* * *

THE Miller Rubber Co. recently completed a factory building 150 x 50 feet, for the manufacture of molded and pressed goods. The addition permits of the employment of 50 more persons.

The new \$1,000,000 plant of the Firestone Tire and Rubber Co. will be under roof by the first of the year. Officials of the company hope to be able to move the office force into the new quarters in January, and the factory during the month following.

The Goodyear Tire and Rubber Co. paid a dividend of 12 per cent. to their stockholders on November 1.

The annual report of the directors of the Akron Chamber of Commerce, many of whom are rubber manufacturers, declared that Akron now has 105 separate factories, with an aggregate capitalization of more than \$75,000,000. They employ 23,450 persons.

THE RUBBER TRADE IN CHICAGO.

BY A RESIDENT CORRESPONDENT.

THE rubber houses furnishing supplies to railway companies report that business is very quiet. This is said to be due to the fact that the railways are doing their business upon a more economical basis than formerly. They not only buy more carefully but make better use of remnants than in former years. This has been brought about by the use of more intelligent help. Take, for example, the matter of hose. Formerly if any part of the hose became damaged the whole piece was thrown away and a new piece was bought. Now the piece is utilized in some way and nothing goes into the scrap pile except material that is absolutely worthless.

It is thought, however, that the trade, as soon as it adjusts itself to the new order of things, will be in a better condition than ever. In fact, many in the trade are doing all they can to assist the railway companies in their campaign of economy, upon the theory that it will inspire more confidence, and thus bring about a more healthy relation as between the trade and the railways. In speaking of the matter to THE INDIA RUBBER WORLD correspondent, Mr. G. S. Wood said:

"You would be surprised, on going into the railroad yards now, to see in how many ways this rule of economy is being practised. Many times something comes into the shop a part of which is broken. The broken part is replaced, and the tool is as good as new—even in so small a matter as a monkey wrench. In former years, if an employé broke a handle the wrench was thrown away; now the wrench is sent to headquarters and a new handle is put in. This rule of economy, of course, cuts down the bill of supplies, and the supply houses are suffering. But when we become adjusted to the new order of things trade will be upon a better basis than ever before. We have no quarrel with the railroads. They are simply doing what should have been done years ago, and I only wonder how some of the roads were able to pay dividends under the old plan."

* * *

A PECULIAR situation faces the merchant handling rubber shoes and boots. On account of the unusually dry weather, especially in the northwest, the retail merchant has held back in making his orders. As a result there are very few retailers who have enough goods to begin to handle the trade when bad weather sets in. This would not be so serious if it was not for the fact that as a result of the retailer not buying the jobbers have also been slow to stock up, and even some of the manufacturers have been tardy about putting out goods for which there seemed to be no demand. As a result, when the wet season begins there is going to be a great rush for rubber goods and many will come

off lacking and then complain because their orders cannot be filled.

* * *

MANY dealers who handle rubber overshoes have not awakened to the fact that the style in shoes demands a new style of overshoes. The new high heel shoes, both for men and women, has played havoc with the old low heeled style overshoe. It not only does not fit but is cumbersome and if by any chance the customer is persuaded to buy it it is only a question of a short time when the high sharp heels will punch holes in them. An in the matter of women's shoes it is simply out of the question to try to make one of those old style rubbers fit or even stay on. The manufacture of rubber overshoes is undergoing a revolution. The up-to-date houses are now making lasts for their rubbers with as much exactness as do the leather shoe makers.

* * *

THERE has been an unusual demand for felt-lined rubber overshoes of the type so much worn in Russia. In former years this trade was largely confined to a foreign element, but of late years Americans have caught the idea of having their overshoes lined with red felt and the line has become popularized until the trade is being taxed to its limit to meet the demand.

* * *

ON account of increased business the Vail Rubber Co., of Chicago, have been compelled to seek larger quarters. After the first of the year this company will be in new quarters at the northwest corner of Twenty-seventh and La Salle streets. This is a three-story structure 51 x 112 feet, and is being especially prepared for this company. The Vail Rubber Co. have been in business only a short time. They took out incorporation papers on November 11, 1910, with a capital stock of \$16,000. The officers are William A. Vail, president; William McCoy, vice-president, secretary and treasurer. These people manufacture rubber heels, gaskets, and valves.

* * *

THERE seems to be a general tendency to put out better tires from year to year. There is a good business reason for this. Tires are now sold on a guarantee, and the rebates on mileage for replacements will not equal the difference in the cost of a new tire and what the dealer paid for the old one.

* * *

IN regard to the suggestion of a trust being formed among the rubber tire men, in the language of a Chicago dealer, "every fellow is for himself and the devil for the hindmost." He says that there is as little coöperation among rubber tire dealers as among any class of business men you might mention. The competition is very stiff and in some instances has created such animosity among the dealers as to cause them to refuse to speak when they meet upon the street.

* * *

MR. M. S. CURWEN, Chicago representative of the Boston Belting Co., spent the week, ending November 19, in Boston, attending a meeting of shareholders. The company has done a very satisfactory business during the year and is especially well pleased with the business of the Chicago branch, which was only recently started.

* * *

MR. L. C. LAWTON, of the Chicago Rubber Co., is contemplating a trip in February to his rubber plantation in Dutch Guiana. This plantation comprises 1200 acres, on which 20,000 trees were planted this year. Mr. Lawton looks forward to a big profit.

* * *

MR. H. B. LAWRENCE, of the Arlington Co., reports that business in celluloid goods is better than it has ever been. The demand is far greater than the supply. This in face of the fact that celluloid combs and brushes are very much more expensive than the aluminum combs and wood back brushes. The greatest trouble now is to fill orders on time, and in some instances it has become necessary to call the salesmen in off the road.

THE RUBBER TRADE IN CINCINNATI.

BY A RESIDENT CORRESPONDENT.

THE recent announcement of a decline in the price of rubber which was followed by an indication from the rubber tire manufacturers that there would be a reduction in the price of automobile tires, has caused the Cincinnati Automobile Club to drop its proposed plan of organizing a coöperative company among the members of the American Automobile Association, and build a factory to make tires which are to be sold to members at cost. Officials of the club when seen refused to discuss the matter, but several of them intimated that there would be nothing further done in this matter, and that the agitation is dying out.

Mr. William Smith, formerly connected with a local theater as its treasurer, and well known in this section, has been appointed representative for the Michelin Rubber and Tire Co., with headquarters in this city. He will be in charge of the Ohio, Indiana and Kentucky territory.

Mr. E. B. Tozier, who was sent to this city several months ago by the Diamond Rubber Co., to supervise the building of that company's new branch house here, and who was later made manager of the Cincinnati branch, has been appointed to take charge of the Diamond company's branch at Minneapolis, Minn. Mr. C. W. Simpson, who was in charge as manager of the solid tire department of the local branch, has been placed in full charge of the new branch. Mr. Tozier's departure from Cincinnati, was greatly regretted by the rubber trade here, as well as in the automobile trade, in which he was well and favorably known.

Mr. J. W. Jamison, manager of the Cleveland branch of The Fisk Rubber Co., was a visitor to this city during the past month in the interest of his company. Mr. Jamison was attracted to this city by reason of the fact that recently several of the large companies have opened branches here. It is understood that The Fisk Rubber Company are looking on Cincinnati with considerable favor as a city to open another branch, and shortly after the first of the year this may come to pass.

According to an announcement made by John S. McMillan, vice-president and general manager of the Dayton Rubber Manufacturing Co., an order for 50,000 airless tires, to be used for automobiles, taxicabs, and light delivery cars, was received by that company on November 14 from the Dayton Airless Tire Co., of Chicago. The order involves \$2,500,000, and it covers five years' time. It was also announced that the company's Canadian patents have been sold to Montreal capitalists for a cash consideration of \$30,000, and a royalty of 7½ per cent. of the gross sales; and that a London firm will take over the British patents.

THE RUBBER TRADE IN SAN FRANCISCO.

BY A RESIDENT CORRESPONDENT.

THIS being the time of year when most of the work of the rubber establishments is finished, except for rainproof garments, there is but little for them to report, other than that they have concluded a year which, generally speaking, has been satisfactory. Waterproof clothing has been moving very briskly, when it is taken into consideration that there has been practically no rainfall so far this season throughout the state. There has been less rain than for many years, but it seems that dealers lowered their stocks considerably last year, and have been ordering freely in anticipation of the demand later on.

Trade conditions generally in San Francisco are improving. So much money has been authorized by the city and state, as well as by individual subscription, that there is no room for doubt but what this city will get the Panama Exposition for 1915, and the prospects of the busy times which the fair will engender are already having a beneficial effect on business.

* * *

THE B. F. Goodrich Co. are proceeding with their plans to get established in San Francisco and the coast. The big Market

street quarters are being put in shape to be occupied by the first of the year for their San Francisco headquarters. At No. 560 Golden Gate avenue the foundations are being laid for a new building which will also be occupied by this company. The Golden Gate store will be for the convenience of automobilists who might not otherwise come down town, and only tires will be carried at this retail branch.

* * *

THE Pacific Coast Rubber Manufacturers' Association held its regular monthly meeting and banquet on November 14 at the Palace Hotel. The banquet was held in honor of Mr. C. C. Case, of Boston, general manager of the Revere Rubber Co., and Mr. Spencer, of New York, the comptroller of the United States Rubber Co. These gentlemen responded with addresses regarding the favorable impression which the Pacific coast and its people had made upon them, and gave some enlightenment as to conditions and the ways of doing things in the East. Messrs. W. F. Bowers, of the Bowers Rubber Works, and W. J. Gorham, of the Gorham Rubber Co., made the principal remarks for the local merchants. Mr. W. R. Pierce, the president of the Association, was in charge. It was intended to have Mr. Garrettson, the general manager of the Electric Hose and Rubber Co., among the guests, as he is now visiting the Pacific coast, but he found it necessary to be in Los Angeles, and could not attend.

Mr. Pierce states that the Association is now making it a point to so time its monthly meetings, when possible, that they may have as guests at the banquet eastern men who may be visiting on the coast. In this way the eastern merchant has an opportunity to meet the local rubber goods men in a body, and the local merchant has a rare opportunity of learning much from the views of the men fresh from the manufacturing centers of the eastern states.

* * *

MR. J. E. FRENCH, the Pacific coast manager for the Pennsylvania Rubber Co., has returned from a six weeks' trip to the factory, and states that he has come back with a new "vacuum cup" tread which he believes is going to show the people here that he has the best non-skid rubber tire going. The Pennsylvania Rubber Co. had Mr. French superintend the opening of three new branch stores on his return—namely, at Salt Lake City, Ogden, and Denver.

* * *

MR. W. A. DAGGETT, representative of the Eureka Fire Hose Manufacturing Co., expects to make a trip to New York immediately after Thanksgiving. He is showing at his salesrooms, in the Postal Telegraph building, a large chart display which very effectively brings out the good points of the line of hose which he represents. It is a sort of pictorial map, showing all of his company's branch stores, the factory, and all of the materials, by actual samples, which go into the manufacture of the hose, from the crude material on up throughout the various stages of perfection.

* * *

THE Goodyear Tire and Rubber Co. (Akron, Ohio) have decided to discontinue their factory branches on this coast, and have placed their lines instead into the hands of a local firm to act as their agents for California, Nevada, and Arizona. Mr. A. F. Osterloh, representing the factory, was here to arrange the change. The firm which has the agency is the W. D. Newerf Co. Mr. A. Leonard, manager of this company, states that they will be able to give it better attention than in the old way.

* * *

H. D. McCoy, secretary of the Chanslor and Lyon Motor Supply Co., with large headquarters on Golden Gate avenue, has returned from Portland, Oregon, where he assisted in opening the firm's new branch store. The Portland store is under the management of Philip Lyon, vice-president of the company. This new branch makes the sixth now operated by this company on the Pacific coast.

AFFAIRS IN MEXICO.

THE daily press during the few days preceding this issue of THE INDIA RUBBER WORLD has been filled with conflicting reports of political disturbances in northern Mexico. Owing to the temporary interruption of the usual means of communication, due in part to extraordinary measures by the Mexican government to control the situation, it has not been an easy matter for the outside world to keep accurately informed as to details. The subject is mentioned here for the reason that the region of the disturbances is in the center of the guayule rubber interest.

As is well known, a large amount of American capital is invested in the Mexican guayule interest—just as so much American capital is involved in mining and rubber plantation interests elsewhere in that republic. It happens that the date of this publication coincides with that for the inauguration of Porfirio Diaz as president for a new term. The opposition to the reelection of General Diaz appears to have been concentrated in northern Mexico, and Señor Don Francisco I. Madero, a member of the important Mexican family of Madero concerned in the guayule interest, has been prominent in the new movement opposed to the federal government.

There has not been time as yet for outsiders to become informed in relation to the real questions at issue, but there is no reason to suppose that the regularly constituted government of Mexico is seriously threatened. Certain rumors that the disturbances in Mexico had as their basis an anti-American sentiment seem to have been wholly without basis. In fact, Señor Madero has made it plain in all his public utterances that American interests in the Mexican republic are not to be disturbed in any way. The claim is put forth that the movement has not been so much a protest against President Diaz as against certain governmental methods in which other members made themselves objectionable.

As this issue goes to press the indications are that the disturbances will soon have become less acute, and doubtless the incident—as the diplomatists say—can be considered closed. In any event, judging from the past history of Mexican affairs, there is no reason to look for any interruption in the production of so important a commodity as the guayule rubber.

THE COMING RUBBER EXHIBITION.

AT a recent meeting of the honorary advisory committee of the Rubber Exhibition, held at the London Chamber of Commerce, the chairman (Mr. H. Kerr Rutherford) proposed that a vote of thanks be accorded the donors of the various trophies presented for competition, and that a copy of this resolution be sent them.

At the same meeting it was resolved "That this committee invite and will heartily welcome the rubber manufacturers of the world to hold an international meeting during the currency of the Exhibition, to enable them to confer upon subjects of mutual interest, protection and profit to themselves and the industry generally."

Several of the more important rubber manufacturing concerns in Great Britain have arranged already to be represented at the rubber exhibition, and other concerns in that country are considering the question of making exhibits. Germany and France are doing very well in this connection, and it is understood that Netherland exhibits will be twice as extensive as at the last exhibition.

The Netherlands section of the Rubber Exhibition of 1908 will be remembered as one of its most complete and interesting features. The Netherlands Committee appointed for the 1911 Exhibition is constituted practically of the same membership as on the former occasion, fourteen of the eighteen members of the new committee having served in 1908. This fact alone promises a repetition of the important representation at London two years

ago of the rubber interests of Holland and her colonies, comprising manufactures, the crude rubber trade, and rubber plantations. The new committee was appointed by decree of her Majesty the Queen of the Netherlands of October 15, 1910, No. 50.

All the French colonies have booked space officially, in addition to many French manufacturers, and it is stated that it is now proposed to appoint a special commission.

Referring to a report of the fire at the Brussels Exposition [see THE INDIA RUBBER WORLD, September 1, 1910—page 437], it appears that an error occurred in reporting the destruction of the very complete display of rubber stamp vulcanizers and rubber stamps and like goods belonging to the J. F. W. Dorman Co. (Baltimore, Maryland). This exhibit was preserved, and arrangements are making for presenting it at the London rubber exhibition.

OBITUARY.

OCTAVE CHANUTE.

THE progress of aerial navigation, which interest is proving of so much importance to the rubber industry, has been for the period of its greater development compassed in the life of Octave Chanute, a civil engineer of note who, born in Paris in 1832, and spent the greater part of his life in America, died in Chicago on November 22, 1910. He was at one time president of the American Society of Civil Engineers, and had to do with many important problems in railway engineering, and was connected with all the leading civil engineering societies in the world. As recently as twenty years ago, though by that time he had devoted not a little study to the subject of aviation, he wrote for a leading engineering publication a comprehensive article, the point of which was that the only apparent progress made in this field to that date was that it had now become possible for one to discuss this subject without being regarded as a "crank." Mr. Chanute had the satisfaction of living until not only had the possibility of practical aviation been demonstrated, but its great practical uses were recognized. Mr. Chanute will be regarded ultimately in many minds as having been the "father of aviation."

DEATH OF TWO AUTHORITIES ON RUBBER.

THE death is reported of Professor Dr. Melchior Treub, who during his long service as director of agriculture in the Dutch East Indies not only made the botanical gardens at Buitenzorg, Java, an international institution, but gave a great incentive to the culture of india-rubber and gutta-percha. Dr. Treub was born in Holland on December 26, 1851, and after extensive and important preparatory work was appointed director of the gardens in Buitenzorg in 1880, holding this position until during the past year. In connection with the London Rubber Exhibition of 1908 he was president of the sub-committee for the East Indies of the able royal Netherlands Committee.

The death is reported also of Dr. W. Burck, another native of Holland, who devoted much of his life to scientific work in the East Indies, being at one time sub-director of the Buitenzorg gardens during the administration of Dr. Treub. A notable work by Dr. Burck was a monograph on the Asiatic *Sapotaceæ*, in which he considered the botanical origins of the commercial gutta-perchas. Dr. Burck was born on February 4, 1848; the last years of his colonial service were devoted to the coffee planting interest; the last eight years he spent at Leyden University, in scientific work.

MR. FRANK A. SEIBERLING, president of the Goodyear Tire and Rubber Co. (Akron, Ohio), spoke before the Ohio Academy of Science at its twentieth annual meeting at Buchtel College, at Akron, on November 25. His remarks covered a recent journey to the regions of the Amazon country and pictured very interestingly the rubber industry of the Amazon Valley.

News of the American Rubber Trade.

GOODRICH GOODS ON THE PACIFIC COAST.

AN important movement on the Pacific coast is to be made on January 1, 1911, by The B. F. Goodrich Co. Heretofore their entire line has been handled on the coast by the Gorham Rubber Co. This agency will be discontinued in its entirety on the above date. The Goodrich company have leased a large five-story and basement building at Nos. 341, 343, 345 and 347 Market street, San Francisco, in the heart of the wholesale district, where a full and heavy stock of their goods will be carried. There is being built for the company a one story and basement building, 25 x 165 feet, on Golden Gate avenue, where they will serve dealers and the general trade with automobile tires. A complete repair department will be installed in this building. Both these are San Francisco locations. In Los Angeles a two story and basement building, 50 x 155 feet, is being erected for the Goodrich company. They will carry and sell from this branch their full line—mechanicals, tires, and druggists' sundries. In Portland they have leased a ground floor and basement, 40 x 80 feet, and will sell the full line. In Seattle they have leased No. 700 Pike street—a large corner store and basement—for automobile tires, and are negotiating for a large store on First avenue, in the wholesale district, in which to carry the balance of their line. The present locations decided on under this comprehensive coast branch plan number six, and it is understood that at least four other cities in the territory assigned to the company's coast business will be opened up with branches during the next year. This will give to the Goodrich company ten stores through which to market their products in that part of the country.

BAILEY'S TWENTY-FIRST ANNIVERSARY.

C. J. BAILEY & Co., No. 22 Boylston street, Boston, on November 14 celebrated the twenty-first anniversary of the opening of their business at that location. In addition to conducting one of the largest retail rubber goods stores in the country, the head of this business, Mr. Charles J. Bailey, has found time to develop a number of useful inventions in relation to rubber, for which he has taken out no less than seventy patents, some of them covering articles which are known to the rubber trade throughout the world. Included in these are his patented rubber brushes and the "Won't Slip" automobile tires and boot heels.

OXFORD RUBBER CO.

THE Oxford Rubber Co. (No. 17 Beach street, Boston) manufacture rubber coats in single and double texture. They have opened, in Cambridge, a factory for proofing their cloth, on a scale which will call soon for about 120 employés.

BOSTON BELTING CO. CONFERENCE.

THE annual conference of the Boston Belting Co.'s western and southern agents was held in Boston on November 16 and 17 at the company's offices. The affair was very successful from start to finish, and a great deal of interest and enthusiasm was manifested by the company's selling representatives as to the outlook for desirable business in 1911. The affair was brought to a pleasant and successful conclusion by a banquet at the Boston Athletic Association on the evening of November 17, when interesting and optimistic remarks were made by nearly all the gentlemen present at the table.

RUBBER GOODS EXHIBIT AT MIDDLETOWN.

THERE was an industrial exhibit at the town hall in Middletown, Connecticut, under the auspices of Twentieth Century Club, during the second week in November, which was largely attended. One of the most interesting exhibits was that of the Goodyear Rubber Co., who have a factory in the town. There were shown miniature boots, contrasted with boots of enormous

size made by the company especially for the Alaskan trade. There were rubbers worn in the Greely arctic relief expedition in 1883, and others worn by rubber gatherers in South America. Among the special types of rubber footwear were articles manufactured for the Chinese and for the Russian trade. Boots worn by copper miners have leather soles with nails driven through them.

A SHOE MANUFACTURING SHOW.

A NOVEL advertising campaign is being conducted by The Beacon Falls Rubber Shoe Co. (Beacon Falls, Connecticut), who are lending to shoe dealers throughout the United States an exhibit of Rubber Shoe Manufacturing for the interest of their patrons. In this exhibit is included a good sized piece of Pará rubber, sheets of rubber in the different stages of manufacture, cross sections of boots and shoes, photographs of factory processes, and so on. It is stated that these exhibits have drawn many people to shoe stores, and that in some cases school rooms have been closed that the pupils might see the displays.

NEW RUBBER STORE IN NEW YORK.

A STORE has been opened in New York by United and Globe Rubber Manufacturing Cos., of Trenton, at No. 126 Chambers street. It is stocked with a full and complete line of mechanical rubber goods, of their own manufacture. In charge of the new store is Mr. George C. Penboss, manager.

THE SHOE TRADE AT LYNCHBURG.

AN important consolidation is taking place in the shoe trade in Lynchburg, Virginia, which has become one of the most important distributing centers for leather shoes in the south. Two leading houses in that city for a number of years have been the Craddock-Terry Co. and the George D. Witt Shoe Co., both firms being both manufacturers and wholesalers, and both maintaining extensive rubber footwear departments. The Craddock-Terry company, founded about twenty years ago, and incorporated December 1, 1898, were capitalized at latest reports at \$1,250,000. At the beginning of the new year this company will assume control of the George D. Witt Shoe Co., in connection with which change there will be a material increase of capital. John W. Craddock will continue as president. The corporate name of the Witt company will be retained. While Mr. Witt retires from active management, it is understood that he will leave his money in the business, to be represented by preferred stock.

TRADE NEWS NOTES.

THE factory of the recently organized Kelly-Racine Rubber Rubber Co., at Racine, Wisconsin [see THE INDIA RUBBER WORLD, October 1, 1910—page 31], will be operated entirely by electricity. The most improved types of generators and motors will be included in the power plant, together with Corliss engines.

The B. & R. Rubber Co. (North Brookfield, Massachusetts), are mentioned as having made a recent shipment of three tons of rubber heels to Buenos Aires.

The Consumers' Rubber Co. (Bristol, Rhode Island), have opened a salesroom at their factory, No. 228 Wood street, where their different lines of rubber footwear will be offered at retail for the local trade.

The Progress Co. (Chicago), manufacturers of the "Knickerbocker" spray brushes and fountain rubber sponges—which have had attention from time to time in THE INDIA RUBBER WORLD—have opened a New York office in the Metropolitan Tower, in charge of Mr. H. L. Altshuler.

Mr. Goodman C. Mandleberg, of J. Mandleberg & Co., Limited, Manchester, England, spent several weeks in the United States recently.

NEW INCORPORATIONS.

GOODYEAR Tire and Rubber Co. of Texas, October 17, 1910, under the laws of Texas; capital \$10,000. Incorporators: C. H. Gray, H. C. Waite—both of Dallas, Texas—and G. W. Rogers, Akron, Ohio.

Fudge Brothers Manufacturing Co., July 20, 1910, under the laws of Indiana; capital \$25,000. Incorporators: John W. Fudge, Marion; Leroy M. Fudge, Muncie; and Lewis M. Fudge, Dunkirk—all of Indiana. The purpose of the company is to put on the market the Fudge "Emergency Tire," which is described as being of solid rubber, with a wire running through it circumferentially, with a special method of fastening. It is to be applied over a damaged pneumatic tire, in case of emergency, without the removal of the pneumatic. The rubber part of the Fudge tire, covered by patents, is now made by the Indiana Rubber and Insulated Wire Co. (Jonesboro, Ind.), and the whole is assembled at the factory of the Fudge company at Marion, Ind.

J. W. Buckley Rubber Co., October 7, 1910, under the laws of New York; capital \$40,000. Incorporators: John W. Buckley, John H. Buckley and Edwin W. Deane—all of Brooklyn, N. Y. John W. Buckley, in 1872, began the sale of mechanical rubber goods and fire apparatus at No. 156 South street, New York. Seven years later he disposed of the fire apparatus business, after which his retail rubber goods trade reached important proportions. In 1899 the business was removed to No. 69 Warren street, in a district which had become better adapted to the trade. The same location has been maintained to the present, and for a number of years the business has been conducted as the J. W. Buckley Rubber Co., which now has become a corporation.

Myhtib Rubber Tire Preserver Co., November 5, 1910, under the laws of Connecticut; authorized capital \$400,000. Incorporators: C. H. Chaffee, East Orange, New Jersey; Daniel H. Hanckel, No. 19 Seventeenth avenue, Brooklyn, New York; and Thomas G. Prioleau, No. 213 West Eighty-first street, New York city. Location of principal place of business: Hartford, Conn.

The location of this company's factory is No. 173 Asylum street, Hartford, Connecticut. Its product, called "Myhtib," is a compound applied to tires to render them oilproof, waterproof and airproof, and to reduce friction. It is described as being useful not only when the car is in use, but in preventing oxidation when cars are stored.

Inner Tire and Manufacturing Co., October 21, 1910, under the laws of Indiana; authorized capital \$10,000. Incorporators: Abraham L. Spangle, Joseph C. DeWees, John E. Palethorpe, and Martin W. Eikenberry.

The officers of this company are A. L. Spangle, president; J. E. Palethorpe, vice president; and M. W. Eikenberry, secretary and treasurer. The object of the company is the sale of automobile tires, in which a cover of the ordinary type is lined with what they call an "inner tire," composed of plies of rubberized duck. This "liner" is coated with a self vulcanized material which causes it to adhere to the inside of the casing. Their location is Kokomo, Indiana.

Empire Rubber Co., October 21, 1910, under the laws of Ohio; capital \$250,000. Incorporators: Frank R. Howells, John F. Christian, Carl W. Parker, Fred J. Ackerman, and Charles F. Haas. Located at Cleveland, Ohio.

Courtney Tire and Rubber Co., November 3, 1910, under the laws of Delaware; authorized capital \$1,000,000. Incorporators: Warren N. Akers, William J. Maloney, and Millard C. Taylor—all of Wilmington, Del.

American Belting and Fabric Co., September 30, 1910, under the laws of California; capital \$100,000. Directors: G. T. Mahony, F. L. McGillan, F. J. White, Marion Oliver, C. F. Gerhenmeyer, J. J. Sheridan and Frank M. Cerini—all of Oakland, Cal.

Annawan Mills (Incorporated), October 24, 1910, under the laws of Massachusetts; authorized capital \$50,000. Incorporators: George H. Hills, James E. Osborn, and Richard P. Borden—all of Fall River, Mass.

NEW INCORPORATIONS.

THE Diamond Rubber Co. of New York, incorporated in New York January 9, 1905, to conduct the business in the East, of The Diamond Rubber Co. (Akron, Ohio), was granted a permit to do business in Texas as a foreign corporation on September 24, 1910, according to a certificate filed in the office of the secretary of state at Austin.

Remington Tire and Rubber Co., November 9, 1910, under the laws of New Jersey; authorized capital \$100,000. Incorporators: Harold G. Remington, Delbert J. Reynolds, Charles S. Cairns, George Anderson, and William W. Clark—all of Minneapolis, Minnesota.

Prince Tire Co., November 12, 1910, under the laws of New Jersey; authorized capital \$25,000. Incorporators: Paul M. Pelletream, No. 3 Broad street, New York; Walter C. Shoup, Hoboken, New Jersey; and John D. Prince, No. 34 East Thirty-second street, New York.

UNITED STATES RUBBER COMPANY'S ISSUES.

TRANSACTIONS on the New York Stock Exchange for four weeks, ending November 19:

COMMON STOCK, \$25,000,000.

[The treasury of a subsidiary company holds \$1,344,000.]
Last Dividend, April 30, 1900—1%.

Week October	29	Sales 2,400 shares	High 38	Low 35 $\frac{3}{4}$
Week November	5	Sales 1,900 shares	High 37 $\frac{1}{4}$	Low 35 $\frac{5}{8}$
Week November	12	Sales 1,800 shares	High 36 $\frac{3}{4}$	Low 34 $\frac{1}{4}$
Week November	19	Sales 1,300 shares	High 36	Low 35

For the year—High, 52 $\frac{1}{2}$, Jan. 3; Low, 27, July 26.
Last year—High, 57 $\frac{3}{8}$; Low, 27.

FIRST PREFERRED STOCK, \$39,824,400.

Last Dividend, October 31, 1910—2%.

Week October	29	Sales 300 shares	High 111 $\frac{1}{2}$	Low 111
Week November	5	Sales 1,421 shares	High 112	Low 110 $\frac{5}{8}$
Week November	12	Sales 1,078 shares	High 111 $\frac{1}{2}$	Low 110 $\frac{1}{8}$
Week November	19	Sales 400 shares	High 110 $\frac{7}{8}$	Low 110 $\frac{1}{2}$

For the year—High, 116 $\frac{1}{2}$, Jan. 10; Low, 99, July 26.
Last year—High, 123 $\frac{1}{2}$; Low, 98.

SECOND PREFERRED STOCK, \$9,965,000.

Last Dividend, October 31, 1910—1 $\frac{1}{2}$ %.

Week October	29	Sales 300 shares	High 74 $\frac{1}{4}$	Low 74
Week November	5	Sales 300 shares	High 73	Low 72
Week November	12	Sales 300 shares	High 73	Low 72
Week November	19	Sales shares	High ..	Low ..

For the year—High, 84, Jan. 3; Low, 59 $\frac{1}{2}$, July 27.
Last year—High, 89 $\frac{1}{2}$; Low, 67 $\frac{1}{2}$.

SIX PER CENT. TRUST GOLD BONDS, \$19,500,000.

Week October	29	Sales 23 bonds	High 102 $\frac{7}{8}$	Low 102 $\frac{7}{8}$
Week November	5	Sales 59 bonds	High 103	Low 102 $\frac{3}{4}$
Week November	12	Sales 37 bonds	High 103	Low 102 $\frac{7}{8}$
Week November	19	Sales 39 bonds	High 103	Low 102 $\frac{3}{4}$

For the year—High, 104 $\frac{1}{2}$, Jan. 15; Low, 101 $\frac{1}{4}$, July 30.
Last year—High, 106; Low, 102 $\frac{1}{4}$.

TRADE NEWS NOTES.

E. H. STROUD & Co., of Chicago, have removed to larger quarters, at No. 55 West Kinzie street. They are makers of crushing and disintegrating machinery, suitable, among other purposes, for various uses in connection with rubber.

M. J. Wolpert, waste-rubber merchant, of Odessa, Russia, has established a branch in New York, at No. 233 Water street, in charge of his American representative, Mr. M. Ch. Jacobsohn.

Mr. Charles Baron, representing Meyer Cohn, waste-rubber merchant, of New York, who has been in Europe of late on a business trip, is expected to return early in this month.

H. A. Huslander (Trenton, New Jersey), manufacturer of rubber stamps and other goods in this line, and engraver of tire molds and the like, has removed his store and offices to No. 8 North Stockton street, reserving the former location—across the street—for manufacturing purposes.

The regular quarterly dividend of 1 $\frac{1}{2}$ per cent. on the preferred shares of the Manufactured Rubber Co. (Philadelphia) was payable on December 1.

INTERCONTINENTAL RUBBER CO.

IT is stated that at an early meeting of the directors of the Intercontinental Rubber Co., a motion will be approved to retire \$500,000 of the preferred stock of the \$2,000,000 now outstanding. [See THE INDIA RUBBER WORLD, November 1, 1910, page 63.]

Mr. Edward B. Aldrich, vice-president and treasurer of the Intercontinental Rubber Co., was reported to be at Torreon, Mexico, during the period when the recent political troubles were supposed to be centering there, and his advices were to the effect that no bad effect upon the guayale rubber industry had been felt.

REPUBLIC RUBBER CO.

At a meeting of directors of the Republic Rubber Co. (Youngstown, Ohio), on November 8, Mr. Thomas L. Robinson was elected chairman of the board, and becomes the financial head of the company, succeeding the late Warner Arms. Mr. Robinson has been trust manager of the Dollar Savings & Trust Co., which position he resigned to devote his attention to the affairs of the Republic Rubber Co. The official list of the rubber company is now constituted as follows:

Chairman of the Board and Directors—THOMAS L. ROBINSON.
President—J. F. MCGUIRE.
Vice President—L. J. LOMASNEY.
First President—L. T. LUTSEN.
Treasurer—M. J. ARMS.
Secretary—C. F. GARISON.
Directors—Thomas L. Robinson, J. F. McGuire, L. J. Lomasney, L. T. Petersen, John C. Wick, H. K. Wick, C. H. Booth, John Tod and David Tod.

RUBBER COMPANY SHARES IN COURT.

THERE have been legal proceedings of late in New York in *re Daniel B. Shepp et al. versus Emmet A. Saunders et al.*—a civil action (No. 10,957) filed in the United States circuit court in Indiana, June 9, 1909. The complaint in this case relates to a claim by Shepp for commissions alleged to be due on the sale of shares of the Mishawaka Woolen Manufacturing Co. The case has not been set down for trial, for the reason that the parties are not through taking depositions. The proceedings in New York, above referred to, were before a United States commissioner, for the examination of members of a syndicate alleged to have been formed to purchase Mishawaka shares, said members having been *subpoenaed* to attend for this purpose. The proceedings were not completed within the month.

TRADE NEWS NOTES.

THE Gilbert Manufacturing Co. (New Haven, Connecticut) have filed suit in the United States circuit court against the B. E.

Manufacturing Co., of New York, alleging infringement of the Fredson E. Bowers's patents on spare tire cases. The United States patents involved are Nos. 779,578 and 915,069.

The regulation prohibiting the use of chains as non-skidding devices for tires on the metropolitan park roadways in Boston has been modified to permit of such use between November 15 and March 31 in each year. This modification was brought about through the influence of the Boston Automobile Dealers' Association.

The Michelin Tire Co. supplied all the tires used on the six cars which finished in the road race for the Grand Prize of the Automobile Club of America, at Savannah, Georgia, on November 12.

The Pennsylvania Rubber Co. (Jeannette, Pa.) have appointed the Post & Lester Co., of Boston, agents for their tires in New England territory.

At a public sale of securities in New York on November 16, the list included 169 preferred shares of the American Hard Rubber Co., at 130, and 338 common shares, at 80.

Carl Duncan Kennedy, of Concord, New Hampshire, is mentioned in the newspapers of his town as having gone to Ecuador in the interest of the Continental Rubber Co., by whom he has been employed for some time past as a chemist. He was accompanied by the Continental company's master mechanic. Mr. Kennedy has, for several years, been a chemist at the Massachusetts State Agricultural College.

The Knox hose couplings, clamps, and other specialties in this line are being marketed by the Goodall Rubber Co., Inc., No. 19 North Seventh street, Philadelphia, who will be pleased to send an illustrated list of the same to all persons in the trade who may be interested.

Hulslander Engraving and Stationery Co., of Trenton, New Jersey, manufacturers of various specialties of interest to the rubber trade, have been incorporated under the laws of New Jersey, with \$25,000 capital. The incorporators are H. A. Hulslander, H. B. Outcalt and C. E. Lander, all of Trenton.

At a recent meeting of the Public Morals Conference, in London, Dr. James Cantlie made a strong protest against the use of rubber baby comforters, or "soothers," pointing out the malformation of mouth and nose liable to result from such use, apart from the lack of cleanliness and consequent danger to health.



NEW PLANT OF THE BUCKEYE RUBBER CO. (AKRON, OHIO).

AUTOMOBILE TIRES IN AMERICA.

WHOEVER wishes to see the best rubber tires in use, as THE INDIA RUBBER WORLD has remarked before, need only to stand on the sidewalks of the leading American cities, and watch the unceasing procession of automobiles—and, if you please, of motorcycles and bicycles—and it is unnecessary to go inside the “shows.” It is true that while in motion one cannot always test the quality of the rubber equipment of the constant procession of these vehicles; but the fact that they go on forever in one’s view, without giving out, is the best proof of their merit. What can one tell of the merit of a tire exhibited on a vehicle in a state of rest in one of the beautifully upholstered show places which New York, Chicago, and other cities now provide for the average man?

And yet these shows persist, and it may be that many men, women, and children will for the first time, become aware, under cover, as it were, that the rubber tire is an essential of the unhorse drawn vehicles which are now transforming local transportation means to so great an extent.

All the leading American makes of tires, of course, will be on exhibition at the eleventh annual show of the Association of Licensed Automobile Manufacturers—those recognizing the validity of the Selden patents—at the Madison Square Garden, on January 7-14. But this will not be all, for the show referred to will be continued for another week—January 14-21—to afford a demonstration of the still more modern application of the rubber tire to the commercial motor truck.

Still earlier in the calendar will be—on December-January 7—the eleventh annual International Automobile Show, in the Central Palace, in New York.

Later will come, in Chicago, the tenth annual National Automobile Show, under the auspices of the National Association of Automobile Manufacturers, Inc., beginning January 28, and devoting one week to pleasure vehicles and another to motor trucks.

A score or more of smaller cities will hold automobile shows which will enable the average citizen to become acquainted with the merits of the rubber tire, whether for automobiles or for motor trucks. And finally, every man with a dollar in his pocket to spend for goods of this kind, will have become so familiar with the merits of rubber tires that such shows will be no more necessary than would be public shows to demonstrate rubber boots and shoes.

RUBBER CLUB OF AMERICA.

THE Rubber Club of America are planning for their mid-winter dinner, a “Pan American Banquet,” to be held in New York early in January. The executive committee have appointed, as a committee of detail and arrangement, the president of the Club and Messrs. A. W. Stedman, George B. Hodgman, E. E. Wadbrook, and Robert B. Baird, the latter acting as secretary for the committee.

PERSONAL MENTION.

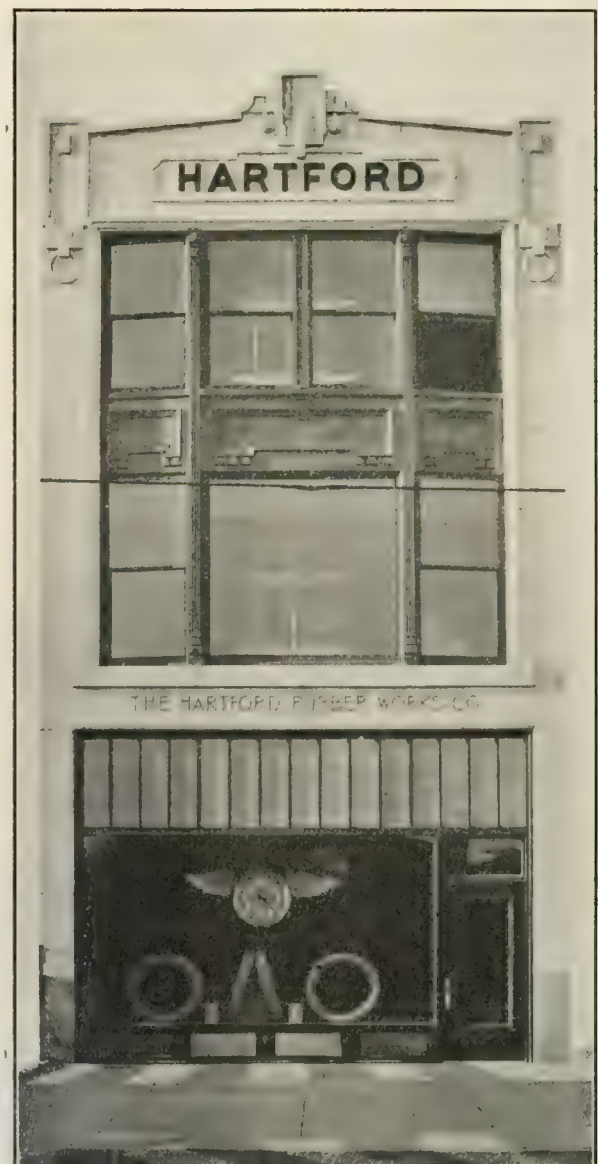
THE name of Colonel Samuel P. Colt having been mentioned prominently in connection with the office of United States senator from Rhode Island, to be filled at the forthcoming session of the legislature of that State, that gentleman has authorized a statement that he is not to be regarded as a candidate, preferring to devote his energies to the office of president of the United States Rubber Co., which he has filled with success for so many years. A brother of Colonel Colt, the Hon. Le Baron B. Colt, a judge of the United States Circuit Court, has also been mentioned in connection with the senatorship, and has consented to permit of the use of his name for this office. Judge Colt will be remembered in the rubber trade by reason of his decision establishing the validity of the Tillinghast tire patent.

Mr. E. E. Buckleton during a recent visit to the United States went as far as the Pacific coast, and incidentally had a couple of weeks’ duck shooting. Mr. Buckleton returned to England on November 30, sailing on the *Mauretania*.

A testimonial in the form of a drinking fountain is to be set up in memory of Colonel Albert A. Pope, in the park which he gave to the city of Hartford some years ago. Colonel Pope, who died in 1909, gave a great impetus to the tire industry, both through popularizing the bicycle and by his work in the promotion of good roads. He was, as will be remembered, at one time proprietor of the Hartford Rubber Works. The testimonial fund, started by the *Bicycling World*, has been turned over to the Hartford board of trade.

Mr. Elston E. Wadbrook—of Poel & Arnold, india-rubber importers, New York, Boston, and Akron—has been chosen as a director of the British Schools and Universities Club, of New York, to serve for three years. Mr. Wadbrook has long been an active member of the Victorian Club, the leading British club in New England, of which he served as president during the year 1909.

The Boston Rubber Shoe Co. have sold the Samuel E. Vaughan Box Co.’s plant in Commercial street, Malden, which they have occupied hitherto for making boxes, and are removing the machinery to a new building constructed for this purpose within their own plant.



THE HARTFORD'S NEW BOSTON BRANCH.
[No. 863 Boylston Street.]

AMERICAN CONGO CO. ELECTION.

At the adjourned annual meeting of the American Congo Co. (New York: November 9) the following were elected directors, to serve one year:

Belgian Section.—Florent Cassart, F. J. Foulon, E. Hinck, E. Huysmanns, H. De Keyser.

American Section.—Edward B. Aldrich, H. B. Baruch, Harold Van der Linde, Paul Morton, Allen A. Ryan, William Sproule.

TRADE NEWS NOTES

THE INDIA RUBBER WORLD acknowledges the receipt, from Messrs. Adelbert H. Alden, Limited, of Pará, of a comprehensive statistical summary of the Amazon rubber situation, drawn up by them for the crop year ended June 30. It is interesting to note that this thoroughly American company has achieved such an important position in the trade of what was, until recently, a region so foreign to the United States.

The managers of the branch stores of the United States Rubber Co. during the month past devoted a week to their annual conference, the period being divided between the New York and Boston offices of the company.

The directors of the Webster Felt and Rubber Co. (Webster, Massachusetts), mentioned in the last INDIA RUBBER WORLD (page 31), are Joseph N. Roy, Arthur H. Racicot, H. C. Richardson, and Alexander Racicot. Mr. Roy is president, Mr. A. H. Racicot treasurer, Mr. Richardson manager, and Mr. A. Racicot secretary.

SEA ISLAND COTTON MARKET.

JOHN MALLOCH & Co., Savannah, report [November 18]: "The net receipts at Savannah for the week are 2,321 bales, against 2,753 last year. The net receipts since September 1 are 18,564 bales, against 31,895 last year. The crop in sight at all ports to date is 29,630 bales, against 48,600 last year. - - - We are beginning to hear reports from various ginneries in the interior that they are now only running two days per week. This is earlier than was the case last year and taken in conjunction with the lateness of the crop, would not indicate a very large ultimate outturn."

Stocks on November 18 (in bales) were as follows:

	1908.	1909.	1910.
Savannah	8,344	13,197	11,441
Charleston	5,174	4,039	4,072
Total	13,518	17,236	15,513

RUBBER IN BRITISH GUIANA.

A RECENT arrival at New York was Mr. E. A. Hackett, secretary of the Bartica Co., recently incorporated [see THE INDIA RUBBER WORLD, September 1, 1910—page 444] to form a rubber plantation at the junction of the Mazaruni and Essequibo rivers, British Guiana. He confirms the report of the discovery of a large number of wild rubber (*Hevea*) trees on the property, of which a systematic account is being taken. Meanwhile arrangements are being made for the tapping of these, beginning with the new year. Orders have been made for large numbers of *Hevea* seeds and stumps from the Malay peninsula, the planting of which will proceed as rapidly as the same come to hand.

RUBBER IN "PALO AMARILLO."

THE recrudescence of the Mexican "palo amarillo" brings up the questions as to whether it contains rubber, and if so, whether it is present in sufficient quantity to make its extraction profitable. Certainly capable chemists have claimed that the latex contained no rubber at all, as stated in THE INDIA RUBBER WORLD long ago. Quite recently a sample of "palo amarillo"

gum that had been in the office of this journal for several years was analyzed and found to contain 3.92 per cent. of rubber of an inferior quality. The analyst, however, advised that it was not a good sample of "palo amarillo." He states that samples recently examined by him contained 26 per cent.

A CHEMISTS' HOME IN NEW YORK.

THE Chemists' Building Co., organized to promote the interests of chemical science and industry in America, has erected a ten story fireproof building, on a lot 56 x 100 feet, at No 50 East Forty-first street, New York. The lower half of this building is leased to the Chemists' Club, and contains all the appurtenances of a social club, together with a large auditorium for scientific meetings, and ample space for a complete chemical library and museum. The upper stories have been constructed for laboratory purposes, and can be rented either as entire floors, or in suitable subdivisions, to analytical, commercial or research chemists, physicists, electrochemists, bacteriologists, and the like, but not as manufacturing laboratories. The value of the neighborhood referred to for such purposes has been indicated by the erection there of a large physicians' and dentists' building alongside, and the attention of physicians and pathologists is called to the advantages which the Chemists' Building laboratories could afford them for their own researches.



Progress of Rubber Culture.

RUBBER PLANTING IN CEYLON.

THE "Ceylon Handbook and Directory," the statistics in which are brought up to July 31, 1910, while delayed somewhat in publication this year, is on account of this delay even more complete than has been true of this long established and authoritative publication, which has been issued regularly since 1863. A most important feature of this book is its review of rubber planting in the colony, in preparing which the compiler has had the coöperation of all the leading planters. The extent of the interest of which this book is a directory is indicated by these statistics for the past two years:

	1909	1910.
Number of plantations.....	1,731	1,755
Total area	957,749	975,425
Area under cultivation.....	625,629	642,330
Acres under rubber.....	174,000	188,000

In reporting on the rubber acreage, it is stated that the area planted to rubber alone is 142,685 acres, against 131,800 acres last year. Where tea and rubber have been interplanted one-half the acreage is credited to rubber. The figures given embrace 5,000 acres of rubber on small holdings owned by native planters.

The area now devoted to the planting of "rubber alone" in Ceylon—that is excluding the area interplanted with rubber and tea and other crops—as stated in the "Handbook," is equivalent to 223 square miles of artificial forest, which may not be overrun or displaced by any other form of vegetable growth.

FORWARD SALES OF RUBBER.

FORWARD sales of plantation rubber continue to be made by some of the producers in the East. A group of Malay States companies having offices in common in London advised their stockholders under date of September 27 of sales arranged, deliveries at Colombo, to be equally distributed throughout 1911, the companies being—

The Pataling Rubber Estates Syndicate, Limited.
The Delaba Rubber Estates, Limited.
The Anglo-Malay Rubber Co., Limited.
The Golden Hope Rubber Estate, Limited.
The London Asiatic Rubber & Produce Co., Limited.
United Serdang (Sumatra) Rubber Plantations, Limited.

The sales referred to are for two grades, at rupee prices equivalent to 6s. 11d. [=£1.68¼] and 6s. 2½d. [=£1.51] per pound, London terms. Earlier in the year numerous forward sales were reported at 9s. 6d. [=£2.30], and one contract for the whole of 1911 still stands at 11s. [=£2.67½].

CONSOLIDATION IN CEYLON.

THERE is a confident tendency in the direction of consolidation or rubber plantations in Ceylon. On the recent date the meetings of five companies were held at Colombo for the purpose of voting to wind up voluntarily, and the plantations involved, together with a private plantation, have since been consolidated under the style of The Grand Central (Ceylon) Rubber Estates, Limited, with an authorized capital of £1,500,000 [= \$7,299,750]. The vendors take shares amounting to £1,013,211, and the remaining shares are reserved for future issue as working capital may be required. The various estates and the acreage planted to rubber on each are as follows.

Grand Central Ceylon Rubber Co., Limited.....	2,384
Durampitiya Rubber Co., Limited.....	3,402
Weyganga Rubber Co., Limited.....	3,738
Southern Ceylon Tea and Rubber Co., Limited.....	1,786
Arandara-Kegalle Rubber Co., Limited.....	500
Karandana estate.....	661

Total 12,471

The number of rubber trees (*Hevea*) on the combined estates is about 2,500,000. There is some production already, and it is estimated that four years hence the total output will reach 2,500,000 pounds, with a gradual yearly increase.

RUBBER PLANTING MISCELLANY.

THE Ceylon Consolidated Rubber Estates, Limited, with an estate in North Matale, purpose planting this year 100,000 Ceorá rubber seeds, with a view to obtaining a yield of rubber before their extensive plantation of *Hevea* can become productive.

The Mexican department of formento lately purchased a large supply of rubber tree seeds for free distribution to land owners wishing to plant the same.

A SHIPPING news item in a New York paper ends with the incidental mention that the steamship referred to had on board \$250,000 worth of rubber from Colombo. This detail might well have had first place in the story, for there are few developments in shipping of more prospective importance than the direct importation of rubber from the Far East to the United States.

ACCORDING to *De Indische Mercur*, of Amsterdam, there have been introduced upon the market in that city the common stock certificates of the Intercontinental Rubber Co.—the American guayule company—through the Nederlandsch Administratie-en Truistkantoor. The *Mercur* hears that the net receipts of the company for January last were \$216,525, and the total net receipts for the year are expected to reach \$3,250,000.



CEORÁ RUBBER TREE IN NICARAGUA.
[Manhattan Plantation.]



"HEVEA" TREE IN NICARAGUA.
[Manhattan Plantation.]

LOWER PRICES FOR TIRES.

A GENERAL reduction in pneumatic tires and inner tubes is announced to be in effect on December 1. Approximately the reduction is to be from 12 to 15 per cent. This information is supplied to THE INDIA RUBBER WORLD in advance of the details promised for the date mentioned. From what has been gained in regard to the new prices, they may be said to compare as follows with prices in the past, taking 34 x 4 inches as a type, and using the quotations of one of the larger manufacturers:

	Casing.	Tube.
December 1, 1910.....	\$41.35	\$ 7.25
July 1, 1910.....	48.30	9.70
September 27, 1909.....	43.65	8.75
September 1, 1908.....	34.50	6.90
September 1, 1907.....	45.25	10.20

The prices of and from 1904 to 1907 were about the same, but slightly lower than September, 1907, prices. The loss of tires prior to 1907 was much larger than at present on account of lack of experience of both user and manufacturer, the user giving little heed to save and less precaution in the care of the tire. The manufacturer, pioneering an untrodden field, was gathering data and laying a foundation for a stable article. The short period of twelve years covers the life of the manufacture of automobile tires in America. This period has brought forth a wonderful evolution, not only in the methods of making tires but in the durability and strength of the tire so that the life of the tire to-day is from 15 per cent. to forty per cent. more than four years ago and this should be taken in consideration in studying the above data.

The Firestone Tire and Rubber Co. are out with a circular letter quoting 10 per cent. off former prices on their "side wire" tires, and other makers of solid tires are expected to make similar reductions.

THE BAD ENDING OF "KORNIT."

CHARLES E. ELLIS and Erwin R. Graves, sentenced to three years imprisonment, after having been convicted in the United States circuit court in New York city on a charge of conspiracy to use the mails to defraud, started for the Federal prison at Atlanta, Georgia, on November 2.

They were described respectively as president and vice president of the Kornit Manufacturing Co., incorporated under the laws of New Jersey in 1904, with an authorized capital of \$500,000. It was represented that the company owned a valuable process for the manufacture of a substitute for hard rubber for insulation and other purposes from the horns and hoofs of cattle. This material they called "Kornit." The shares were alluringly advertised, particularly in the *Magazine of Mysteries* published by Ellis, with the result that much money was received, in small individual sums, through the mails.

The Kornit company did rent factory space in a building at Belleville, New Jersey, which was burned soon afterward, on March 1, 1907. The fire was used as an excuse for asking for more money from the shareholders. The total amount collected has been estimated as high as \$1,000,000, though the actual amount charged against the company by the Federal authorities was only \$371,000. It is alleged that at the time of the fire only \$104 worth of "Kornit" had been turned out, and that none was made afterward.

A petition in involuntary bankruptcy was filed against the company in Newark, New Jersey, in August, 1909, as a result of which a considerable amount of money was tied up for the benefit of investors. Ellis owned a hotel in New York. His wife was burned to death on last New Year's day.

A BOOK for rubber planters—Mr. Pearson's "What I Saw in the Tropics."

THE EDITOR'S BOOK TABLE.

DE CULTUUR VAN HEVEA. HANDLEIDING VOOR DEN PLANTER. Door Dr. P. J. S. Cramer, Directeur van den Landbouw in Suriname. Amsterdam: J. H. de Bussy. 1910. [Cloth. 8vo. Pp. XV + 138 + plates. Price, 2 florins.]

THE author of this very practical volume, director of agriculture in Dutch Guiana, in the latter part of 1909 proceeded under a government commission to the Far East for the purpose of studying the details of the cultivation there of Pará rubber (*Hevea Brasiliensis*), with a view to making the information of value in connection with planting in his own colony. While he visited the Dutch East Indies his attention was devoted principally to Ceylon and the Malay States, where rubber plantations have been longer established. The book is concise in style and devoted to definite details regarding soils, drainage, the comparative merits of planting seeds and stumps, the employment of catch crops, plant diseases and pests, tapping methods and implements, and the preparation of rubber from the latex. The 40 illustrations, which greatly enhance the value of the work, are mainly half tones, which are of excellent quality and printed on inserted leaves of extra paper.

BOLETIM DO MUSEU GOELDI (MUSEU PARAENSE) DE HISTORIA Natural e Ethnographia. Tomo VI—1909. Para, Brazil: Estabelecimento Graphico C. Wiegandt. 1910. [Paper. 8vo. Pp. 267 + tables.]

THIS volume contains the annual reports of the Pará museum for 1907 and 1908, followed by several scientific memoirs—mostly relating to botanical subjects. Throughout the book the work of the director, Dr. Jacques Huber, is much in evidence.

RUBBER SHARE HANDBOOK. DETAILS OF COMPANIES OWNING Rubber and Other Produce Properties, in Ceylon, the Malay Peninsula, British North Borneo, Sumatra, Java, Africa and South America. [Seventh edition.] London: The Financier and Bullionist, Limited, 1910. [Boards. 8vo. Pp. iv + 648. Price, 2s. 6d., net]

Of the various directories and compendiums of rubber planting companies, this book, issued under the auspices of a leading financial journal in London, which was a pioneer in the advocacy of rubber planting investments, is the most comprehensive and informing. It is, in particular, up to date. The volume now before us revised up to August 31, 1910, reached New York by mail only seven weeks later, which is a brief period, considering the details to be put through the printing office. It may be of interest to note here that the new edition embraces 648 pages, against only 500 pages in the April 8, 1910 edition. The number of companies reported is 582, against 467 in the preceding edition, and 1131 directors are named, against 776 before. These larger figures indicate a rapid growth in the extent of rubber planting interests.

THE MEXICAN YEAR BOOK. A STATISTICAL, FINANCIAL AND Economic Annual, Compiled from Official and Other Returns, 1909-10. Issued Under the Auspices of the Department of Finance. Mexico City, New York and London: Mexican Year Book Publishing Co. [1910.] [Cloth. 8vo. Pp. XV + 700 + Maps. Price \$6, gold.]

THIS is one of the most comprehensive year books relating to any country which has yet reached THE INDIA RUBBER WORLD. Beginning with a historical summary of the Mexican republic, it gives in full the constitution of Mexico, together with statistical details regarding imports and exports, customs duties, information regarding banking, railroads, mining and the like, and particularly a compendium of such Mexican laws as are most likely to be of interest to foreigners contemplating business operations in or connections with Mexico. A considerable part of the work is devoted to a concise description of each of the states in the republic, with information suited both to Mexicans and foreigners, a detailed folding map being included for each state. The edition before us is printed in English.

MR. PHILIP GLASS, of Melbourne, Australia, after a visit to the Far East, was instrumental in the organization of the Port Swettenham Rubber Co., with £60,000 capital, which was subscribed in three days.

Review of the Crude Rubber Market.

Rubber prices for most grades are higher than a month ago—for some grades considerably so. That is all that can be reported here. Of course, the question of chief interest in the trade is what the future is to be, but prophecy is beyond the province of the well seasoned trade journal, which THE INDIA RUBBER WORLD is trying to become. There are, as always, "bulls" and "bears" in the rubber selling market. On the one hand it is held that the tire manufacturers have been buying quietly at the favorable prices which have ruled of late, in view of the assured demand for rubber for their requirements next season. On the other hand, the idea obtains that buyers have refrained from placing orders, with the probable effect of giving a boost to prices when they become more active in placing orders. At any rate, prices have been going up, at a time when the output from the Amazon is on the eve of reaching its largest proportions during the year. The stiffening of prices has been assisted by the higher average of results at the last Antwerp than at the October sale.

NEW YORK QUOTATIONS.

Following are the quotations at New York for Pará grades, one year ago, one month ago, and November 29—the current date:

PARÁ.	Dec. 1, '09.	Nov. 1, '10.	Nov. 29.
Islands, fine, new.....	173@174	121@122	128@129
Islands, fine, old.....	174@175	none here	none here
Upriver, fine, new.....	194@195	140@141	150@152
Upriver, fine, old.....	195@196	142@143	152@153
Islands, coarse, new.....	71@72	73@74	72½@73½
Islands, coarse, old.....	none here	none here	none here
Upriver, coarse, new.....	117@118	102@103	108@109
Upriver, coarse, old.....	none here	none here	none here
Cameta.....	82@83	75@76	75@76
Caucho (Peruvian), ball.....	105@106	100@101	105@106
Caucho (Peruvian), sheet.....	none here	none here	none here

PLANTATION PARÁ.

Fine smoked sheet.....	207@208	141@142	165@166
Fine pale crepe.....	208@210	140@141	156@157
Fine sheets and biscuits.....	@...	138@139	150@151

CENTRALS.

Esmeralda, sausage.....	99@100	91@92	96@97
Guayaquil, strip.....	84@85	none here	none here
Nicaragua, scrap.....	96@97	90@91	92@93
Panama.....	82@83	none here	none here
Mexican, scrap.....	96@97	90@91	92@93
Mexican, slab.....	82@83	60@61	60@61
Mangabeira, sheet.....	67@70	75@76	75@76
Guayule.....	59@60	65@66	65@66
Balata, sheet.....	@...	@80	@80
Balata, block.....	@...	@56	@56

AFRICAN.

Lopori ball, prime.....	136@137	124@125	125@126
Lopori strip, prime.....	none here	118@119	none here
Aruwimi.....	118@119	110@111	110@111
Upper Congo ball, red.....	123@124	110@111	115@116
Ikelemba.....	none here	none here	none here
Sierra Leone, 1st quality.....	118@119	119@120	124@125
Massai, red.....	118@119	119@120	124@125
Soudan niggers.....	107@108	108@109	112@113
Cameroon ball.....	86@87	66@67	66@67
Benguella.....	75@76	88@89	85@86
Madagascar, pinky.....	98@99	none here	none here
Accra, flake.....	22@23	46@47	45@46

EAST INDIAN.

Assam.....	94@95	none here	none here
Portrauk.....	6@6	5½@5½	5½@5½
Borneo.....	55@64	none here	none here

Late Pará cable quote:

	Per Kilo.		Per Kilo.
Islands, fine.....	5\$500	Upriver, fine ..	8\$000
Islands, coarse.....	2\$800	Upriver, coarse ..	6\$000

Latest Manáos advices:

Upriver, fine.....	8\$100	Exchange ..	16½d.
Upriver, coarse.....	5\$100		
Exchange.....	16½d.		

NEW YORK PRICES FOR OCTOBER (NEW RUBBER).

	1910.	1909.	1908.
Upriver, fine.....	\$1.37@1.50	\$2.02@2.15	\$1.03@1.13
Upriver, coarse.....	1.02@1.20	1.20@1.32	.72@.82
Islands, fine.....	1.20@1.46	1.83@2.02	.95@1.04
Islands, coarse.....	.73@.90	.72@.88	.47@.54
Cameta.....	.75@.89	.83@.96	.53@.56

Statistics of Para Rubber (Excluding Caucho).

	NEW YORK.			ENGLAND.		
	Fine and Medium.	Coarse.		1910.	1909.	1908.
Stocks, September 30.....	141	34 =		175	142	79
Arrivals, October.....	874	366 =		1240	1180	1458
Aggregating.....	1015	400 =		1415	1322	1537
Deliveries, October.....	860	344 =		1204	1106	1316
Stocks, October 31.....	155	56 =		211	216	221
	PARÁ.			ENGLAND.		
	1910.	1909.	1908.	1910.	1909.	1908.
Stocks, September 30.....	860	755	440	1308	325	285
Arrivals, October.....	2705	2740	3160	332	730	805
Aggregating.....	3565	3495	3600	1640	1055	1090
Deliveries, October.....	2690	3265	3080	520	825	825
Stocks, October 31.....	875	230	520	1120	230	265
World's visible supply, October 31.....	3,524	2,537	2,742			
Pará receipts, July 1 to October 31.....	7,535	7,460	7,830			
Pará receipts of caucho, same dates.....	1,800	1,140	1,130			
Afloat from Pará to United States, October 31.....	278	966	586			
Afloat from Pará to Europe, October 31.....	1,040	895	1,150			

London.

NOVEMBER 15.—The amount listed for this auction was about 40 tons less than that offered a fortnight ago. The sale opened with good bidding, demand being fairly general for all descriptions. Prices showed an advance of about 4d. per pound, at first, but as the sale proceeded the tone was distinctly stronger and the advance in some instances amounts to as much as 8d. as compared with previous quotations. So far the highest price realized is 6s. 7¼d. [= \$1.21¾] for Highlands smoked sheet, other parcels of this grade selling from 6s. 4¾d. to 6s. 7¼d. and sheets and biscuits after opening at 5s. 10d. are selling up to 6s. 2d. and crepe about the same price. Owing to the bank holiday on December 27, it has been arranged that the next auctions shall take place as follows: November 29, December 13, December 20, and January 3, provided that the shipments arriving between December 13 and 20 are large enough.—Gow, Wilson & Stanton, Limited.

Rubber Scrap Prices.

LATE New York quotations—prices paid by consumers for car-load lots, per pound—are slightly higher, as follows:

	November 1.	December 1.
Old rubber boots and shoes—domestic..	9½@10	10½@ ¼
Old rubber boots and shoes—foreign..	9½@ 9¾	9½@10
Pneumatic bicycle tires.....	6¾@ 7	5½@ 5½

Automobile tires.....	8 @ 8½	8½@ 8¾
Solid rubber wagon and carriage tires..	9¼@ 9½	9½@ 9¾
White trimmed rubber.....	12 @ 12½	
Heavy black rubber.....	6¼@ 6½	
Air brake hose.....	5¼@ 5½	
Garden hose.....	2¼@ 2½	
Fire and large hose.....	2½@ 3	
Matting.....	1½@ 1¾	

Antwerp.

L. & W. VAN DE VELDE report [November 16]:

Considering the instability of the market during the last month, the result of our today's sales may be considered as satisfactory. Congo and sundry grades were well competed for, but prices ruled rather irregular; out of 435 tons put up for sale, 283 tons were sold at an average slightly under valuations.

Plantation was in strong demand. The 44 tons offered were cleared at an average advance of 50 centimes per kilogram [= 5 cents per pound]. Our next sale will be held on December 14, and will comprise the rubber cargo of the steamer *Bruxellesville* about 200 tons, and further about 50 tons plantations and sundry grades.

Stocks to-day, about 462 tons.

QUOTATIONS NOVEMBER 16 (FRANCS PER KILO.)

Kasai, red, I.....	14.00-14.50
Kasai, red, Loanda II. grade.....	12.50-13.00
Kasai, black I.....	14.50-15.25
Equateur, Yengu, Ikelemba, Lulonga, etc.....	14.50-15.25
Lopori (Maringa).....	7.75- 8.25
Upper Congo ordinary, Sankuru, Lomami.....	13.00-13.25
Mongala laniènes.....	12.25-13.00
Aruwimi.....	12.25-13.00
Uelé.....	12.25-13.00
Wamba, red, I.....	10.25-10.75
Straits, crêpe, I.....	16.58-16.88
Guayule.....	6.50- 7.00
Maniçoba.....	7.00- 7.50

COMPARATIVE PRICES OCTOBER 31 (FRANCS PER KILO.)

[Reported by L. & W. VAN DE VELDE, Antwerp.]

	1908.	1909.	1910.
Kasai, red, I.....	9.00-9.50	14.25-14.37	14.00-14.50
Kasai Loanda, red, II.....	7.50-8.00	11.75-12.25	12.50-13.00
Kasai, black, I.....			14.50-15.25
Equateur, Yengu, Ikelemba, Lulonga, etc.....	9.00-9.50	14.50-15.00	14.50-15.25
Lopori II. (Maringa).....	5.00-6.00	9.00- 9.25	7.75- 8.25
Upper Congo, ordinary, Sankuru, Lomami.....	8.50-8.95	14.00-14.37	13.00-13.25
Mongala strips.....	8.50-8.95	14.00-14.37	12.25-13.00
Aruwimi.....	8.50-8.95	14.00-14.37	12.25-13.00
Uelé.....	8.50-8.95	14.00-14.37	12.25-13.00
Wamba, red, I.....	6.00-6.25	11.00-11.25	10.25-10.75

Sundry Grades.

Straits crepe I.....	24.50-24.90	16.00-16.30
Guayule.....	5.50- 6.00	7.50- 8.00
Maniçoba.....		7.00- 7.50
Soudan, red.....	12.50-12.75	12.25-12.50
Rio Nunez.....	14.00-14.25	13.75-14.00

RUBBER STATISTICS FOR OCTOBER.

DETAILS.	1910.	1909.	1908.	1907.	1906.
Stocks, Sept. 30...kilos	580,908	397,454	654,161	719,005	566,683
Arrivals in October..	275,753	265,185	554,756	237,963	509,727
Congo sorts.....	175,101	199,664	487,104	180,366	444,829
Other sorts.....	100,652	65,521	67,652	57,597	64,898
Aggregating.....	856,661	662,639	1,208,917	956,968	1,076,410
Sales in October....	257,887	197,808	546,813	233,152	455,329
Stocks, October 31...	598,774	464,831	662,104	723,816	621,081
Arrivals since Jan. 1.	3,305,148	3,836,338	4,217,919	4,302,317	4,762,232
Congo sorts.....	2,525,799	2,858,957	3,583,058	3,656,700	3,702,744
Other sorts.....	779,349	977,381	634,861	645,617	1,059,488
Sales since Jan. 1...	3,247,884	3,967,242	4,562,709	4,236,685	4,876,338

RUBBER ARRIVALS FROM THE CONGO.

NOVEMBER 3.—By the steamer *Bruxellesville*:

Bunge & Co.....(Société Générale Africaine) kilos	108,300
Do.....(Société Abir)	180
Do.....(Comité Spécial Katanga)	5,600
Do.....(Comptoir Commercial Congolais)	20,000
Do.....(Chemins de fer Grands Lacs)	3,600
Société Coloniale Anversoise.....(Belge du Haut Congo)	2,800
Do.....(Cie. du Lomami)	8,100
L. & W. Van de Velde.....(Cie. du Kasai)	59,000
Do.....	1,500
Charles Dethier.....(American Congo Co.)	2,500
	211,580

Rubber Exports From the Congo.

OFFICIAL statement for the year 1909:

Production of the Congo State.....kilos	3,750,615
In transit through the State.....	1,550,789
Total.....	5,301,404

* * *

"RUBBER Tires and All About Them"—a book for everybody who has to with tires.

African Rubbers.

NEW YORK STOCKS (IN TONS).

October 1, 1909.....	67	May 1, 1910.....	125
November 1.....	134	June 1.....	90
December 1.....	134	July 1.....	120
January 1, 1910.....	228	August 1.....	250
February 1.....	134	September 1.....	300
March 1.....	161	October 1.....	375
April 1.....	121	November 1.....	100

Liverpool.

WILLIAM WRIGHT & Co. report [November 1]:

Fine Pará.—The market has been active and subject to violent speculative fluctuations; in fact the ordinary rules that govern supply and demand seem entirely to have disappeared, and prices are advanced or depressed to suit the convenience of outside speculative manipulation—a most unhealthy state of affairs. The trade have taken advantage of this decline to buy to some extent and would buy more, only sellers are afraid in the present uncertain state of the market to offer far ahead. America still continues to take a moderate amount from this market, and has also bought more freely in Brazil. Closing value of Upriver, 5s. 9d. [= \$1.40].

Amsterdam.

F. JOOSTEN reports [November 15]:

In spite of the general hardening tendency and decidedly increasing demand, prices here remain cheap, and only a small business was reported in wild rambong (*Ficus rubber*). Our next sale by private tender will take place about the middle of December.

Para.

R. O. AHLERS & Co. report [November 11]:

The heavy fluctuations of both exchange and home markets and the uncertainty of the near future have paralyzed our market a good deal. The little signs of reanimation have soon disappeared again.

New York.

IN regard to the financial situation, Albert B. Beers (broker in crude rubber and commercial paper, No. 68 William street, New York) advises as follows: "During November the demand for commercial paper has been rather light, and mostly from out of town banks, the rates for the best known rubber names ruling at 5½@6 per cent., and those not so well known 6¼@6½ per cent."

PARA EXPORTS, BY GRADES.

The following analysis of the exports of rubber from the Amazon for the year 1909—by ports, without reference to the countries of production—and also the distribution as between the United States and Europe, is given in a report by the British consul at Pará. The figures indicate weight in metric tons:

	Fine.	Medium.	Coarse.	Caucho.	Total.
AMERICA:					
Pará.....	4,154	651	4,134	716	9,655
Marãos.....	5,356	1,149	1,735	1,898	10,138
Itacoatiara.....	4	2	4	2	12
Iquitos.....	21	2	8	72	105
Total.....	9,537	1,804	5,881	2,688	19,910
EUROPE:					
Pará.....	5,278	576	1,869	1,951	9,674
Marãos.....	3,072	720	725	2,240	7,357
Itacoatiara.....	71	11	53	13	148
Iquitos.....	796	127	326	1,402	2,651
Total.....	9,817	1,434	2,973	5,606	19,830
GRAND TOTAL.....	19,354	3,238	8,854	8,294	39,740

The exports for 1907, according to the same report, were 37,514 tons, and for 1908, 37,686 tons.

CATALOGUES RECEIVED.

STANDARD Rubber Shoe Co., Chicago.=Catalogue of Rubber Boots and Shoes, for the Season 1910. 64 pages.
 Detroit Rubber Co., Detroit, Michigan.=Catalogue of Rubber Boots and Shoes, Combinations, etc. October, 1910. 80 pages.
 Inter-State Rubber Co., Omaha, Nebraska.=Catalogue and Price List. 48 pages.
 The Duck Brand Co., Chicago.=Catalogue, 1910, Rubber Boots and Shoes. 56 pages. Also: Wet Weather Goods. 52 pages.
 Amsterdam Rubber Co., New York.= Catalogue of Rubber Boots and Shoes. 45 pages.
 The Safety Insulated Wire and Cable Co., New York.=Underground Conduit and Cable Systems for Every Service. 16 pages.

Para.

R. O. Ahlers & Co. report [October 31]:

Transactions have been rather small, and sellers who wish to realize in the face of heavy arrivals at Manáos find only reluctant buyers for limited quantities. It is probable, however, that the heavy fall in exchange will have a stimulating effect on our market. [London exchange is quoted at 17 1/2-18 p.m.]

IMPORTS FROM PARA AT NEW YORK.

(The Figures Indicate Weight in Pounds.)

NOVEMBER 1.—By the steamer *Napo*, from Iquitos:

	Fine	Medium	Coarse	Caucho	Total
H. A. Astlett	10,700			1,800	22,400
Henderson & Korn	14,300		3,400		17,700
Total	25,000		13,300	1,800	40,100

NOVEMBER 3.—By the steamer *Acre*, from Pará:

	Fine	Medium	Coarse	Caucho	Total
A. T. Morse & Co.	62,100		42,900		105,000
New York Commercial Co.	47,200	4,000	9,400	1,100	61,700
Poel & Arnold	11,100	1,000	36,300		48,400
Total	120,400	5,000	88,600	1,100	215,100

NOVEMBER 3.—By the steamer *Francis*, from Manáos and Pará:

	Fine	Medium	Coarse	Caucho	Total
A. T. Morse & Co.	140,200	11,800	28,200	15,100	195,300
Poel & Arnold	36,100	13,800	47,300	900	98,100

New York Commercial Co.	36,100	15,000	21,100	9,300	81,500
Henderson & Korn	9,300	200	1,800	300	11,600
William E. Peck & Co.	1,800	300	5,300		7,400
Total	223,500	41,100	103,700	25,600	393,900

NOVEMBER 15.—By the steamer *Dominic*, from Manáos and Pará:

Poel & Arnold	217,200	61,800	89,100	600	368,700
A. T. Morse & Co.	135,200	16,000	97,900	38,800	287,900
New York Commercial Co.	101,400	15,400	39,000	2,000	157,800
H. A. Astlett	9,600		27,000		36,600
L. Johnson & Co.	29,300				29,300
Henderson & Korn	8,900		12,500		21,400
Total	501,600	93,200	265,500	41,400	901,700

NOVEMBER 25.—By the steamer *Cearense*, from Manáos and Pará:

Poel & Arnold	432,600	41,900	130,000	500	605,000
A. T. Morse & Co.	310,900	67,100	85,400	52,100	515,500
New York Commercial Co.	112,400	60,700	46,500	2,100	221,700
Henderson & Korn	39,800	600	8,600		49,000
H. A. Astlett	23,900	3,800	13,100	600	41,400
C. P. dos Santos	18,200	2,900	5,300		26,400
L. Johnson & Co.	11,400		10,600		22,000
William E. Peck & Co.	1,400		5,900		7,300
Total	950,600	177,000	305,400	55,300	1,488,300

PARA RUBBER VIA EUROPE.

Oct. 24.—By the *Baltic*—Liverpool:
Raw Products Co. (Coarse)..... 13,500

Oct. 25.—By the *Luderland*—Antwerp:
New York Commercial Co. (Fine)..... 5,000

Oct. 25.—By the *Oruba*—Mollendo:
New York Commercial Co. (Fine)..... 2,500

Oct. 29.—By the *Kaiserin Augusta*—Hamburg:
Rubber Trading Co. (Fine)..... 7,000

Oct. 31.—By the *Caronia*—Liverpool:
Robinson & Co. (Fine)..... 11,500
N. Y. Commercial Co. (Fine)..... 11,500
Raw Products Co. (Coarse)..... 13,500
Poel & Arnold (Coarse)..... 13,500

Nov. 4.—By the *Manoetania*—Liverpool:
N. Y. Commercial Co. (Fine)..... 22,500
Poel & Arnold (Fine)..... 11,000
Liversey & Co. (Coarse)..... 13,500

Nov. 7.—By the *Cedric*—Liverpool:
Raw Products Co. (Fine)..... 7,000

Nov. 9.—By the *Magdalena*—Mollendo:
General Rubber Co. (Fine)..... 13,500
N. Y. Commercial Co. (Fine)..... 1,500

Nov. 11.—By the *Lusitania*—Liverpool:
N. Y. Commercial Co. (Fine)..... 58,000
Poel & Arnold (Fine)..... 11,500
Raw Products Co. (Fine)..... 7,000
Poel & Arnold (Caucho)..... 9,000
Raw Products Co. (Coarse)..... 11,000

Nov. 12.—By the *Blucher*—Hamburg:
W. L. Gough Co. (Fine)..... 2,000

Nov. 14.—By the *Amerika*—Hamburg:
N. Y. Commercial Co. (Caucho)..... 22,000

OTHER NEW YORK ARRIVALS.

CENTRALS.

[*This sign, in connection with imports of Centrals, denotes Guayule rubber.]

Oct. 24.—By the *Allemania*—Colombia:
L. Hageners & Co. 3,500
Maitland, Coppell & Co. 3,500
Pablo Calvet & Co. 2,500
R. del Castillo & Co. 2,000
Delima Cortissoz & Co. 1,000
Oglesias & Martinez. 1,000

Oct. 24.—By the *Matanzas*—Tampico:
Ed. Maurer *125,000
New York Commercial Co. *67,000
For Europe *80,000

Oct. 25.—By the *Proteus*—New Orleans:
A. N. Rotholz 5,000
Manhattan Rubber Mfg. Co. 2,500

Oct. 25.—By the *El Rio*—Galveston:
Continental-Mexican Rubber Co. *225,000
E. S. Churchill *11,000

Oct. 26.—By the *Sarnia*—Greytown:
G. Amsinck & Co. 2,000
Suzarte & Whitney 2,000
Isaac Brandon & Bros. 2,000
Frank Lapiedra 1,000

Oct. 25.—By the *Oruba*—Colon:
W. R. Grace & Co. 6,500
G. Amsinck & Co. 4,500
Isaac Brandon & Bros. 1,500
Scholz & Marturet. 1,000

Oct. 28.—By the *Merida*—Vera Cruz:
H. Marquardt & Co. 2,500
Graham, Hinkley & Co. 1,500
International Product Co. 1,000
A. Klipstein & Co. 1,000
E. Steiger & Co. 1,000

Oct. 31.—By the *Vigilancia*—Tampico:
Ed. Maurer *200,000
New York Commercial Co. *67,000
Poel & Arnold *65,000
For Europe *65,000

Nov. 1.—By the *Alleghany*—Colombia:
Maitland, Coppell & Co. 9,000
L. Hageners & Co. 4,000
Cabellero & Blanco 2,000
Delima Cortissoz & Co. 1,000

Nov. 1.—By the *El Norte*—Galveston:
Continental-Mexican Rubber Co. *225,000
E. S. Churchill *20,000

Nov. 1.—By the *Acre*—Maceio:
A. D. Hitch & Co. 5,500

Nov. 3.—By the *Frutera*—Honduras:
A. Rosenthal & Sons 3,500
West Coast Rubber Co. 1,000
H. Schutte & Gieseken & Co. 1,000

Nov. 4.—By the *Mauretania*—Liverpool:
Poel & Arnold 22,500

Nov. 5.—By the *Esperanza*—Frontera:
E. Steiger & Co. 2,500
Harburger & Stack 3,500
W. L. Wadleigh 3,000

Nov. 7.—By the *Advance*—Colon:
G. Amsinck & Co. 8,000
J. Sambrada & Co. 4,000
Isaac Brandon & Bros. 2,000
Dumarest Bros. & Co. 1,500
Roldan & Van Sickle 1,500

Nov. 7.—By the *Vasari*—Bahia:
J. H. Rosbach & Bros. 11,000

Nov. 7.—By the *Bayamo*—Tampico:
Ed. Maurer *75,000
New York Commercial Co. *34,000
For Europe *75,000

Nov. 7.—By the *El Paso*—New Orleans:
Manhattan Rubber Mfg. Co. 4,500
A. T. Morse & Co. 1,500

Nov. 7.—By the *Albington*—Colombia:
A. Held 4,500
G. Amsinck & Co. 2,500
B. del Castillo & Co. 2,000
L. Hageners & Co. 2,000
Oglesias & Martinez 2,000
Pablo Calvet & Co. 1,500

Nov. 7.—By the *El Mundo*—Galveston:
Continental-Mexican Rubber Co. *225,000
Charles T. Wilson *9,000

Nov. 10.—By the *Maracaibo*—Curacao:
Suzarte & Whitney 4,500
R. Del Gallego & Co. 1,500
G. Amsinck & Co. 1,000

Nov. 10.—By the *Panama*—Colon:
G. Amsinck & Co. 25,000
Isaac Brandon & Bros. 10,000
L. Johnson & Co. 3,000
Roldan & Van Sickle 2,500
F. Rosenstern & Co. 2,500
H. Mann & Co. 2,500
J. Sambrada & Co. 2,500
Wessels Kulenkampff & Co. 2,500
J. J. Julia & Co. 1,500
American Trading Co. 2,000
Dumarest Bros. & Co. 1,500
Mecke & Co. 1,000
Silva Bussenius & Co. 1,000
Lazard Freres 1,000

Nov. 10.—By the *Lusitania*—Liverpool:
Raw Products Co. 11,000
Robinson & Co. 2,500

Nov. 11.—By the *Proteus*—New Orleans:
A. T. Morse & Co. 7,000
A. N. Rotholz 3,000
Manhattan Rubber Mfg. Co. 2,000
G. Amsinck & Co. 1,500

Nov. 11.—By the *Mexico*—Frontera:
Mecke & Co. 1,500
Harburger & Stack 1,000
Scholz & Marturet. 1,000
J. W. Wilson & Co. 1,000
For Europe 4,500

Nov. 11.—By the *El Sud*—Galveston:
Continental-Mexican Rubber Co. *75,000
E. S. Churchill *10,000

Nov. 12.—By the *Kentuckian*—Mexico:
H. Marquardt & Co. 5,000
American Trading Co. 5,000

Nov. 14.—By the *Seguranca*—Tampico:
Ed. Maurer *125,000
New York Commercial Co. *100,000
For Europe *70,000

Nov. 14.—By the *Amerika*—Hamburg:
George A. Alden & Co. *70,000
Isaac Brandon & Bros. *8,000

Nov. 14.—By the *El Oriente*—Galveston:
Continental-Mexican Rubber Co. *150,000
E. S. Churchill *11,000

Nov. 15.—By the *Prinz August Wilhelm*—Colon:

Pablo Calvet & Co. 4,500
G. Amsinck & Co. 2,500
Isaac Brandon & Bros. 2,000
Gillespie Bros. & Co. 1,000
Seam & Co. 1,000

Nov. 17.—By the *Preston*—Honduras:
J. Sambrada & Co. 1,500
George A. Alden & Co. 1,000

Nov. 18.—By the <i>Monterey</i> —Vera Cruz:			
E. N. Tibbals & Co.	2,000		
H. Marquardt & Co.	1,000		
For Havre	2,500	5,500	
Nov. 19.—By the <i>Matanzas</i> —Tampico:			
Ed. Maurer	*125,000		
New York Commercial Co.	*100,000		
For Europe	*45,000	*270,000	

AFRICAN.

Octr. 24.—By the <i>Baltic</i> —Liverpool:			
George A. Alden & Co.	25,000		
General Rubber Co.	11,500	36,500	
Octr. 24.—By the <i>Cincinnati</i> —Hamburg:			
Poel & Arnold.	9,000		
Raw Products Co.	5,000		
General Rubber Co.	2,500	16,500	
Octr. 25.—By the <i>Vaterland</i> —Antwerp:			
Livesey & Co.		11,500	
Octr. 26.—By the <i>Chicago</i> —Havre:			
A. T. Morse & Co.		155,000	
Octr. 19.—By the <i>Kaiserin Auguste Victoria</i> —Hamburg:			
Rubber Trading Co.	13,500		
Robert Badenhop	3,500		
George A. Alden & Co.	4,500		
Raw Products Co.	2,500	24,000	
Octr. 31.—By the <i>Caronia</i> —Liverpool:			
Rubber Import Co.	6,500		
George A. Alden & Co.	5,000	18,000	
Octr. 31.—By the <i>Lapland</i> —Antwerp:			
George A. Alden & Co.	5,500		
W. L. Gough Co.	5,500	11,000	
Octr. 31.—By the <i>Celtic</i> —Liverpool:			
George A. Alden & Co.		55,000	
Nov. 3.—By the <i>Majestic</i> —London:			
George A. Alden & Co.		8,000	
Nov. 3.—By the <i>Pennsylvania</i> —Hamburg:			
George A. Alden & Co.	33,500		
General Rubber Co.	15,500		
Poel & Arnold.	15,500		
Livesey & Co.	7,000		
Robert Badenhop	5,500		
A. T. Morse & Co.	4,500		
W. L. Gough Co.	2,500	84,000	
Nov. 4.—By the <i>Mauretania</i> —Liverpool:			
General Rubber Co.	112,000		
Poel & Arnold.	5,500	117,500	
Nov. 7.—By the <i>Cedric</i> —Liverpool:			
Raw Products Co.		5,500	
Nov. 9.—By the <i>La Gascogne</i> —Havre:			
A. T. Morse & Co.		33,500	
Nov. 9.—By the <i>Samland</i> —Antwerp:			
Raw Products Co.		2,500	
Nov. 10.—By the <i>Adriatic</i> —Havre:			
Poel & Arnold.		11,500	
Nov. 11.—By the <i>Lusitania</i> —Liverpool:			
Poel & Arnold.	15,500		
George A. Alden & Co.	8,000	23,500	
Nov. 12.—By the <i>Bluecher</i> —Hamburg:			
George A. Alden & Co.	45,000		
A. T. Morse & Co.	25,000		
Poel & Arnold.	11,500		
W. L. Gough Co.	5,000	86,500	
Nov. 14.—By the <i>Arabic</i> —Liverpool:			
George A. Alden & Co.	13,000		
Rubber Trading Co.	1,500	14,500	

Nov. 14.—By the <i>Ameria</i> —Hamburg:			
George A. Alden & Co.	3,500		
Robert Badenhop	4,500	8,000	
Nov. 18.—By the <i>Teutonic</i> —Havre:			
A. T. Morse & Co.	6,500		
George A. Alden & Co.	5,000	11,500	

EAST INDIAN.

[*Denotes plantation rubber.]

Octr. 26.—By the <i>Oceanic</i> —London:			
New York Commercial Co.	*10,000		
Poel & Arnold.	*8,000		
Henderson & Korn.	*4,500	*22,500	
Octr. 31.—By the <i>Lapland</i> —Antwerp:			
A. T. Morse & Co.	*15,500		
Robert Badenhop	*5,000	18,000	
Octr. 31.—By the <i>Neue York</i> —London:			
New York Commercial Co.	*5,000		
Poel & Arnold.	*4,500	*13,500	
Octr. 31.—By the <i>Kasenga</i> —Colombo:			
New York Commercial Co.	*60,000		
A. T. Morse & Co.	*50,000	*110,000	
Nov. 2.—By the <i>Uhenfels</i> —Colombo:			
A. T. Morse & Co.	*10,000		
Nov. 3.—By the <i>Majestic</i> —London:			
Poel & Arnold.	*5,500		
Henderson & Korn.	*3,500		
William H. Stiles.	*2,500		
Raw Products Co.	*2,000	*13,500	
Nov. 13.—By the <i>St. Paul</i> —London:			
New York Commercial Co.	*4,500		
Henderson & Korn.	*2,500		
Manhattan Rubber Mfg. Co.	6,500	13,500	
Nov. 9.—By the <i>Samland</i> —Antwerp:			
A. T. Morse & Co.	*40,000		
General Rubber Co.	*7,000	*47,000	
Nov. 9.—By the <i>Lennox</i> —Singapore:			
L. Littlejohn & Co.	10,000		
Malaysian Rubber Co.	5,000	15,000	
Nov. 10.—By the <i>Adriatic</i> —London:			
Poel & Arnold.	*18,000		
New York Commercial Co.	*7,000		
Henderson & Korn.	*5,500	*30,500	
Nov. 12.—By the <i>Minnetonka</i> —London:			
General Rubber Co.	*85,000		
Nov. 14.—By the <i>Philadelphia</i> —London:			
A. T. Morse & Co.	*65,000		
William H. Stiles.	*5,500		
Henderson & Korn.	*7,000	*77,500	
Nov. 15.—By the <i>Albenga</i> —Singapore:			
Poel & Arnold.	13,500		
L. Littlejohn & Co.	11,500		
Heabler & Co.	22,500		
Ed. Maurer	11,000	58,500	
Nov. 17.—By the <i>Teutonic</i> —London:			
Poel & Arnold.	*40,000		
Malaysian Rubber Co.	11,500		
New York Commercial Co.	*7,000		
William H. Stiles.	*2,000	60,500	
Nov. 18.—By the <i>Korona</i> —Colombo:			
A. T. Morse & Co.	*45,000		
New York Commercial Co.	*11,000	*56,000	

GUTTA-JELUTONG.

Octr. 29.—By the <i>Bracmer</i> —Singapore:			
L. Littlejohn & Co.	350,000		
W. L. Gough Co.	200,000		
Poel & Arnold.	100,000		
Heabler & Co.	250,000		
State Rubber Co.	55,000	955,000	

Nov. 9.—By the <i>Lennox</i> —Singapore:			
W. L. Gough Co.	150,000		
Heabler & Co.	100,000		
Heabler & Co.	10,000	260,000	

Nov. 18.—By the <i>Albenga</i> —Singapore:			
L. Littlejohn & Co.	225,000		
State Rubber Co.	100,000		
Heabler & Co.	200,000		
W. L. Gough Co.	150,000		
Ed. Maurer	30,000	705,000	

GUTTA-PERCHA.

Octr. 26.—By the <i>Saramaca</i> —Trinidad:			
Heabler & Co.	22,500		
Robert Soltan & Co.	44,500	67,000	
Nov. 3.—By the <i>Teutonic</i> —Hamburg:			
Robert Soltan & Co.		9,000	
Nov. 9.—By the <i>Lennox</i> —Singapore:			
L. Littlejohn & Co.		20,000	
Nov. 12.—By the <i>Bluecher</i> —Hamburg:			
Robert Soltan & Co.		11,000	
Nov. 15.—By the <i>Albenga</i> —Singapore:			
L. Littlejohn & Co.	20,000		
Heabler & Co.	40,000	60,000	

BALATA.

Octr. 24.—By the <i>St. Louis</i> —London:			
Ed. Maurer		17,000	
Octr. 26.—By the <i>Saramaca</i> —Trinidad:			
G. Amsinck & Co.	10,000		
Middleton & Co.	2,500	12,500	
Octr. 27.—By the <i>Uller</i> —Demarara:			
George A. Alden & Co.		6,000	
Nov. 2.—By the <i>Parima</i> —Demarara:			
Middleton & Co.	15,000		
Ed. Maurer	3,500		
George A. Alden & Co.	3,500	22,000	
Nov. 7.—By the <i>Advance</i> —Colon:			
Eggers & Heinlein.		8,000	
Nov. 9.—By the <i>Marouijne</i> —Surinam:			
Ed. Maurer	5,500		
B. Williamson Co.	1,500	7,000	
Nov. 10.—By the <i>Noordam</i> —Rotterdam:			
Earle Bros.		2,000	
Nov. 15.—By the <i>Coppename</i> —Trinidad:			
J. A. Pauli & Co.		3,500	
Nov. 18.—By the <i>Guiana</i> —Demarara:			
George A. Alden & Co.	5,500		
Ed. Maurer	3,500	9,000	

CUSTOM HOUSE STATISTICS.

PORT OF NEW YORK—OCTOBER.

Imports:	Pounds.	Value.
India-rubber	5,802,816	\$6,359,543
Balata	95,040	75,232
Gutta-percha	85,421	34,396
Gutta-jelutong (Pontianak)	3,454,565	212,199
Guayule	1,004,519	421,870
Total	10,442,361	\$7,103,240
Exports:	Pounds.	Value.
India-rubber	176,912	\$206,261
Balata	61,971	48,571
Gutta-percha		
Guayule	22,640	9,126
Reclaimed rubber	41,177	5,474
Rubber scrap, imported	1,270,838	\$110,094
Rubber scrap, exported	457,399	57,563

PARA EXPORTS OF INDIA RUBBER, SEPTEMBER, 1910 (IN KILOGRAMS).

NEW YORK.					EUROPE.					TOTAL.	
EXPORTERS.	Fine.	Medium.	Coarse.	Cauch.	TOTAL.	Fine.	Medium.	Coarse.	Cauch.	TOTAL.	TOTAL.
Gruner & Co.	19,712	1,190	30,690	10,560	62,152	5,950	2,541	17,504		25,995	88,147
E. Pinto Alves & Co.	177,994	1,589	121,770		301,353				3,569	3,569	304,922
J. Marques	6,460	680	17,490		24,630	7,795	2,660	1,147	78,433	90,035	114,665
R. O. Ahlers & Co.	21,319		4,361	27,294	52,974	7,150		500	16,384	24,034	77,008
Adelbert H. Alden, Limited.	23,970	2,210	21,120		47,300	3,061	547	6,595	10,264	20,467	67,767
Scholz, Hartje & Co.	14,880	1,796	21,712		38,388	8,160	510	330	5,280	14,280	52,668
R. Suarez & Co.						19,365	320	225	15,208	35,118	35,118
Gordon & Co.						8,160	2,210			10,370	10,370
Alves Braga Rub. Est. & Trad. Co.						5,066	1,190	341		6,597	6,597
Pires Teixeira & Co.						3,060		660		3,720	3,720
Sundries	1,870		5,790		7,660	72,220	28,385	18,600	16,668	135,873	143,533
Iracatiara, direct						4,000	424	3,687	1,568	9,679	9,679
Manaos, direct	250,563	65,306	101,330	35,341	452,540	286,402	45,186	16,715	78,071	426,374	878,914
Iquitos, direct	24,378		6,576	22,886	53,840						53,840
Total, September, 1910	541,146	72,771	330,839	96,081	1,040,837	430,389	83,973	66,304	225,445	806,111	1,846,948
Total, August, 1910	412,669	72,026	316,228	95,408	896,331	566,371	60,911	79,674	349,635	1,056,591	1,952,922
Total, July, 1910	221,719	30,220	268,507	181,195	701,641	480,197	54,589	164,570	380,247	1,079,603	1,781,244



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Plantation Rubber From the Far East.

EXPORTS OF CEYLON GROWN RUBBER.

[From January 1 to October 10, 1909 and 1910. Compiled by the Ceylon Chamber of Commerce.]

	1909.	1910.
To Great Britain	pounds 548,100	1,068,030
To United States	295,960	940,177
To Canada		1,911
To Belgium	28,163	35,799
To Germany	18,194	10,479
To Australia	8,893	4,604
To Italy	608	841
To France	1,639	
To China	1,508	
Total	903,065	2,061,841
[Same period 1908—567,448 pounds; same 1907—373,448.]		

EXPORTS FROM THE FEDERATED MALAY STATES.

[For the first eight months of 1910. Reported by the Commissioner of Trade and Customs.]

	Pounds.
Perak	1,454,169
Selangor	4,218,983
Negri Sembilan	1,553,401
Pahang	2,731
Total	7,229,284
Total, 8 months, 1909.....	3,447,338

TOTAL EXPORTS FROM MALAYA.

[From January 1 to dates named. Reported by BARLOW & Co., Singapore. These figures include the production of the Federated Malay States, but not of Ceylon.]

	Pounds. 1908.	Pounds. 1909.	Pounds. 1910.
From Singapore (to Sept. 30)....	1,504,118	1,902,916	2,659,962
From Penang (to Sept. 15).....	971,887	1,685,291	1,546,034
From Pt. Swettenham (to Sept. 30)			5,946,053
Total	2,476,005	3,588,207	10,152,049

SUMMARY.

THE figures which follow show the total exports of plantation rubber from the regions mentioned for the three calendar years 1907, 1908, and 1909 (with a few figures missing for December, 1909), compared with the figures thus far available for 1910—less than nine months for the Malay States and a little more than nine months for Ceylon. No figures are included for the Dutch East Indies:

	1907.	1908.	1909.	1910.
Ceylon	530,908	831,905	1,372,416	2,061,841
Malay States	2,089,085	3,671,435	7,390,643	10,152,049
Total	2,619,993	4,503,340	8,763,059	12,213,890

These figures seem to point to a total output, during 1910, of more than 15,000,000 pounds, or, approximately, 7,000 metric tons—an amount not reached by the Amazon region before 1871, and scarcely exceeded in 1883.

London.

NOVEMBER 1 and 2.—The offerings of Plantation at this auction were the largest that have yet been brought forward, and at the opening the demand was somewhat quiet. Competition, however, was fairly general for all kinds, and on the second day a distinct improvement was noticeable in the tone, the concluding quotations being the highest marked during the auction. The chief feature was again the strong support for the medium and dark sorts of crepe.—Gow, Wilson & Stanton, Limited.

OFFERINGS (IN TONS).

	Ceylon.	Malaya.	Total.
This auction	46	262½	308½
Same time last year.....	27¾	109½	137¼

QUOTATIONS.

	Nov. 2, 1909.	Nov. 2, 1910.
Sheet and Biscuits;		
Smoked sheet	9s. 4d. @ 9s. 1½d.	5s. 9d. @ 5s. 11¼d.
Good to fine sheet.....	9s. @ 9s. 1d.	5s. 4½d. @ 5s. 7½d.
Good to fine biscuits.....	9s. @ 9s. 1d.	5s. 4½d. @ 5s. 7½d.
Crepe;		
Very pale	9s. 1d. @ 9s. 3½d.	5s. 6½d. @ 5s. 8½d.
Medium and polish.....	8s. @ 9s.	4s. 11¾d. @ 5s. 6½d.
Dark and brown.....	5s. @ 7s. 10½d.	3s. 6d. @ 5s. 2½d.
Unwashed Scrap;		
Medium to fine.....	6s. 2d. @ 6s. 8½d.	3s. 11d. @ 4s. 9½d.
Dark and low.....	4s. 3d. @ 6s. 1d.	1s. @ 3s. 9d.

The highest price paid at the last auction was for smoked sheet offered by Sekong Rubber Co., Limited, of Borneo—5s. 11¼d. [= \$1.44½].

Lewis & Peat report [November 3]: "Since our last report the market has kept steady, but only a moderate business has been done. A small sale of hard [Pará] was made at 5s. 8½d., but immediately after there were buyers at 5s. 9d. Since then a little has sold at 5s. 9d. @ 5s. 9½d., and no sellers now under 5s. 10d. [= \$1.42]."

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GUTTA-PERCHA

Edited by HENRY C. PEARSON—Offices, No. 15 West 38th Street, NEW YORK.

Vol. XLIII. No. 4.

JANUARY 1, 1911.

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Published on the 1st of each Month by

THE INDIA RUBBER PUBLISHING CO.,

No. 15 West 38th Street, New York.

CABLE ADDRESS: IRWORLD, NEW YORK.

HENRY C. PEARSON,
EDITOR.**HAWTHORNE HILL,**
ASSOCIATE.

Vol. 43.

JANUARY 1, 1911.

No. 4.

SUBSCRIPTIONS: \$3.00 per year, \$1.75 for six months, postpaid, for the United States and dependencies and Mexico. To the Dominion of Canada and all other countries, \$3.50 (or equivalent funds) per year, postpaid.

ADVERTISING: Rates will be made known on application.

REMITTANCES: Should always be made by bank or draft, Postoffice or Express money orders on New York, payable to THE INDIA RUBBER PUBLISHING COMPANY. Remittances for foreign subscriptions should be sent by International Postal Order, payable as above.

DISCONTINUANCES: Yearly orders for subscriptions and advertising are regarded as permanent, and after the first twelve months they will be discontinued only at the request of the subscriber or advertiser. Bills are rendered promptly at the beginning of each period, and thereby our patrons have due notice of continuance.

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THE INDIA RUBBER PUBLISHING CO.

Entered at New York postoffice as mail matter of the second class.

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A HAPPY NEW YEAR !

THE new year opens under conditions favorable to the continuation of the prosperity which prevails in every civilized country. Two years ago there were to be heard in every business center in the world references to the "American crisis," certain economic disturbances which were universal apparently having "come to a head" in connection with some bank failures in New York. But these events only proved blessings in disguise, for the excision of certain institutions—or, what was more important, the wiping out of certain practices—cleared the financial atmosphere and gave a guarantee of a sounder business basis for the future. From that time there has been improvement in financial and commercial markets, hand in hand with recovery from any depression into which industrial conditions may have fallen.

Between nations universal peace obtains. In the industrial world no widespread troubles are to be noted. There is nowhere any political disturbance to check the general progress of the world. On the other hand, a better understanding among nations is the rule, as evidenced by the late Pan American conference at Buenos Aires, and the growing support of The Hague Tribunal. All of these things may not appear at first to have a direct bearing upon industry

and commerce, but were the opposite conditions to prevail there would be a different story to tell of the business world.

In the industry and trade represented by THE INDIA RUBBER WORLD the year just closed has resulted favorably, and the prospects for the year to come are favorable. The producers of crude rubber are winning profitable returns, the makers of rubber goods are prosperous, and the demand for such goods shows the consumers, on the whole, to be able to buy freely and at satisfactory prices. The industry, indeed, is showing an increase, and in every department of it there is life, progress and optimism. Happily this state of affairs is an indication of good conditions in other lines of trade, for in these modern days of interdependence one department of human endeavor does not long continue to show advancement if all is not well with the others.

To the patrons of THE INDIA RUBBER WORLD we beg to tender assurances of our continued appreciation, and to wish them all, in whatever land, a Happy New Year!

THE UNITED STATES AND CRUDE RUBBER.

AMERICAN capital promises to become a very important factor in the development of the crude rubber interest—taking the world as a whole—though investments in this field were long regarded with so little interest in the United States. But this apparent indifference to dealing with rubber at first hands was only another illustration of the former American tendency to devote the energies of the nation to building up home interests; to subjugating the land and creating a new industrial world and transportation means to serve every interest of the people.

It is true that citizens of the United States did much in early days to develop and systematize the output of rubber from Pará. It was North Americans who adapted to commercial use the crude rubber shoes made by Indians on the Amazon, even sending down wooden lasts upon which they might form more shapefully foot covering than was suggested by the native taste. The exportation of rubber from Pará was organized on a larger basis, whether for American or European consumption, by American capital. When Colombia ranked among the two or three largest producing countries in the world the trade was controlled in the United States of America. The development of the rubber trade of far off Madagascar began in the days when ships from this side of the Atlantic went out to the Far East laden with American prints. But in this new country there was much to do in the way of internal development, and for a while trade abroad, in whatever line, was left for the most part to foreigners.

A notable instance of the change that is coming about is the building by Americans of the town of

Goebilt, in Borneo, solely in the rubber interest. Another is the investment in rubber plantations in the Far East by the largest rubber manufacturing company in the country. Already American india-rubber merchants are established for buying purposes in every primary market of importance, and it has been noted that the largest buying at the recently established rubber auctions in Ceylon has been for American account. Americans are planting rubber in every country in which it grows on this hemisphere; they are interested in such important measures for tapping rubber fields as the Madeira-Mamoré railway; they hold rubber concessions in Africa.

Some of the interests here referred to may be small as yet compared with what some other countries can show in the same fields, but they are of recent development. Moreover, they are not based upon speculation, for the most part, but represent substantial investment. It is only logical that they should become greatly extended, in the near future, in view of the large share of the world's production that is required for American factories. Ultimately we may expect not only to see the rubber consumed in the United States produced under American auspices, but large manufacturing companies controlling the sources of their supplies.

THE AMERICAN DEMAND FOR RUBBER.

THE continued growth in population of the United States of America, as indicated by the late decennial census, is in itself a point of no little importance to the rubber interest as a whole; what is of even more importance is the increasing buying capacity of the American public—something which, while apparent in many ways, is not to be measured by any official census return. The recently announced results by the census bureau of the population for 1910 permit of the following comparison for ten year periods, together with which are given the imports, for corresponding periods, of crude india-rubber, not including gutta-percha, jelutong, balata, or the like:

	1890.	1900.	1910.
Population	62,947,714	75,994,575	91,972,266
Imports (in pounds).....	33,712,089	49,397,138	101,078,825

It will be plain from these figures that the increase in the consumption of rubber in the United States has been at a greater rate than the growth of population. It is true that the rubber imported has not all been consumed in the United States, but nearly so. Meanwhile the population in non-contiguous territories which have come under the control of the United States, and not included in the above figures, now exceeds 10,000,000, and these people are becoming users of india-rubber goods. Besides, the exports to rubber manufactures to wholly foreign countries have increased in value, during twenty years, from \$1,236,443 to \$9,060,895.

Twenty years ago the *per capita* imports of rubber in

the United States were less than a half pound; last year, in addition to the large increase in population, the imports *per capita* amounted to considerably more than one pound, and this at a time when the price of rubber was at a higher price than was ever known before. At the same time, there has been a notable growth in America in the use of lower, but useful, grades of rubber, of which no account is taken in the statistics which appear in this article.

But more than this: The typical agriculturist of a large section of the United States two decades ago held his farm under mortgage and was compelled to limit his products to the lowest possible limit, whereas to-day in the same regions the average farmer is a bank depositor, and looked upon as a most desirable customer for automobiles—and rubber tires.

Whatever the rest of the world may show, the conditions of life and business in the United States are most encouraging (1), to producers of crude rubber and (2), to makers of rubber goods.

RUBBER HAS BEEN GOING HIGHER THAN EVER during the past month—at least in the form of aeroplane fabrics.

IF THREE DOLLAR RUBBER failed to bring out a synthetic product commercially available, what higher price will be necessary to bring it out?

WHILE THERE IS NO TRADE MORE PROGRESSIVE than the rubber business, there is none more conservative. Else we should not continue to see "boots and shoes" advertised always as if boots were the more important item, whereas the number of pairs of rubber shoes worn is many fold greater.

HOW IT WOULD HAVE DELIGHTED the late Colonel George Earl Church, could he have lived only a year longer, which would have given him an opportunity to hear of the practical operation of the Madeira-Mamoré railway, which he worked so long and so earnestly to promote. Not only is this important entering wedge into a hitherto almost inaccessible country a reality, but the work of progress of which it is the most tangible representation bids fair to continue indefinitely.

THE AUTOMOBILE SHOWS NOW IN PROGRESS and shortly to be held are on a larger scale and more elaborate and complete than their predecessors; they are sure to be largely attended, and no doubt much business can be directly credited to them. At the same time there are indications that the "automobile shows," as the term is now understood, will soon be a thing of the past—in New York, at least. The streets of this city daily afford a vastly greater automobile show than could be organized in any one building, and it is at once perpetual and constantly changing. Besides, the street show forces the automobile upon the attention of the public, while the indoor shows reach only those persons who can be induced to pay to enter. There may be local automobile exhibitions in many towns for years to come, but not at the direct expense of the makers, as is now the case. Whatever is said here of automobiles applies equally to tires, without which, of course, there would be no automobiles.

SOME OF THE NEWSPAPERS THAT KNOW so much more about the rubber industry than the people who own the industry and work to keep it going continue to try to connect a certain United

States senator with the new tariff law, with the idea of showing that a rubber manufacturing company is enabled thereby to earn inordinate profits, part of which go into the senator's pockets. The readers of THE INDIA RUBBER WORLD, being an intelligent class, will not care to have more of the details of this rubber nonsense than they may happen to have forced upon them in the daily press, and it will not be repeated here. But one question may be suggested: The rubber companies with which the senator's name has been connected by the press have able competitors of the liveliest sort, who appear to be doing an enormous business, raising and lowering the prices of their goods to meet their ideas of the conditions of trade. Has each of these companies its own tariff making senator, or has Senator Aldrich been working for his own friends and the enemy at the same time?

QUESTIONS NOT YET SETTLED.

TO THE EDITOR OF THE INDIA RUBBER WORLD: Being interested in the guayule rubber, I would respectfully ask you to inform me if, after the plant has been cut, it will again grow and bear. If so, how long it will take to bear after it has been cut.

Will the industry augment or decrease, and if on the decrease, what life do you believe it (approximately) to have? Thanking you in advance for your kind attention in the matter, I remain,
Yours, very truly,

J. G.

New York, December 13, 1910.

THE FIRST CEYLON RUBBER SALES.

THE periodical auctions of rubber at the Ceylon Chamber of Commerce sales room, of which advance notice was given in THE INDIA RUBBER WORLD, were inaugurated on November 4, with satisfactory results. The offerings were made by five firms, as follows:

	Pounds.
George White, Bartlett & Co. (36 packages).....	3,181
E. John & Co. (107 packages).....	11,417
Keell & Waldoek (16 packages).....	1,560
Forbes & Walker (260 packages).....	24,098
Somerville & Co (102 packages).....	8,786
Total	49,042

It is commented on in connection with this first sale that an initial shyness was evident on the part of buyers, but a good portion of the rubber offered was promptly disposed of. The best prices realized were 4.15 rupees [= \$1.35] for sheet from Olympus and biscuits from Keenapitiya; 4.20 rupees [= \$1.36] for Neuchâtel pale crepe; and 4.30 rupees [= \$1.39] for Siriniwesa and "S. K." sheet. London auction results on the same date, for good to fine Plantation sheet and biscuits were 5s. 4¼d. [= \$1.30¾] to 5s. 7½d. [= \$1.36.8]. Fine Pará at the same date was quoted up to 5s. 10d. [= \$1.42].

Regarding this initial rubber sale, the *Ceylon Observer* remarks how much more successful it was than the initial tea sale under the same auspices, on July 30, 1883, when the offerings included five lots from three estates, totaling 6,629 pounds, of which only 999 found buyers. The tea sales, however, at once became popular, and have grown in extent until they now involve more than half the tea production of the colony.

The *Times of Ceylon* suggests that "practically the same factors which led to the development of the local tea market operate in the case of rubber, the chief of which is the convenient position of Colombo in relation to the big consuming countries. Buyers in these countries, apart from Great Britain, already find it convenient to come direct to Colombo for their supplies, and it was an interesting fact that by far the largest bidder at the first sale buys chiefly for the United States of America. It

is only a natural consequence that sellers will put their produce mostly on the Colombo market, as is the case in regard to tea." The principal buyers referred to above were Messrs. C. W. Mackie & Co., of Colombo. The *Times*, in connection with the fact that ten grades of rubber were offered, says: "We trust that before many months the output will have been standardized, with the consequent reduction in the varieties offering."

The quantities catalogued for the second sale, on November 11, were as follows:

	Pounds.
Forbes & Walker.....	15,390
Somerville & Co.....	620
E. John & Co.....	5,414
Keell & Waldoek.....	3,347
George White, Bartlett & Co.....	813
Total	25,584

The second sale resulted favorably, though at somewhat smaller rates in keeping with the condition of the London market. At the third Ceylon sale, on November 18, the amounts offered by the respective brokers aggregated 18,686 pounds 15 ounces. In no other market is rubber dealt with with such precision as to take account of ounces in weights. The unit of money in Ceylon, however, is very small, so that the price of an ounce can be calculated without going so far into fractions as where the gold dollar is the unit. Every rupee per pound added to the price of rubber means 2 cents, gold, per ounce.

As shown on the statistical pages of this issue, the shipments direct to the United States of Ceylon grown rubber are practically as large as to Great Britain; in addition a considerable amount of the Ceylon rubber shipped to Europe finds its way eventually to New York.

A RUBBER FASHION NOTE.

A CORRESPONDENT, whose sex does not transpire from the pseudonym of "Why Not," writes to an English paper: "I see it stated that a Bond street firm has been greatly taken with a model of an evening gown, in which 'little pieces of mole and flame colored soft rubber tubing' enter effectively into the trimming scheme. But why not go further, and have complete gowns made of rubber? In cases where the husband has, so to speak, put his shirt on 'rubbers,' it seems a nice and equitable adjustment that rubber should supply a garment for the wife. Take gold, for example. What could be better than a costume made of fine plantation sheet rubber, delicately smoked, and ribbed in a manner suggestive of corduroy? Think of its advantages—waterproof, washable, durable, elastic, simple, effective, and inexpensive. Then, again, in the 'hobble-skirt,' how it would obviate the restriction of movement. On account of its elasticity any length of stride could be taken freely, with the additional advantage that the material would tend to bring the foot down again with that smart prevision so desirable in these days of militant suffragism.

"It opens up a vista of great possibilities. The fortnightly auction sales, for instance, would be anything but the humdrum, prosaic institutions which they are at present. Ladies would be certain to figure prominently here. It is not difficult to imagine a City man on reaching home being met by some such outburst as this:

"Oh, dearest, I secured such a lovely bargain at the rubber sales today! Such a pretty remnant of *Highlands smoked* sheet, at only six and eleven three! I thought it would make up so beautifully for motoring, trimmed with some of the scrappy negrohead I bought at the last sale. It would be so effective and chic, without being in the slightest sense bizarre."

THE London licensing authorities have placed their ban upon sectional solid rubber tires for motor 'buses.

"It Is All Part of the Cost of Rubber."

THERE is in prospect a branch of the Madeira-Mamoré railway—regarding which details have appeared recently in THE INDIA RUBBER WORLD—to cross the Madeira river near the *cachuela* Pão Grande, to the bank of the Beni river, above the *cachuela* Esperanca, the line to be about 17 miles long. The little Madeira river newspaper, the *Porto Velho Marconigram*, states that the operation of this short branch line will eliminate 300 odd kilometers [= about 186 miles] of river navigation, in giving an outlet for rubber for the Beni and Madre de Dios rivers, in Bolivia, to say nothing of avoiding the present heavy loss of lives and property.

Regarding the hardships of transportation in the waters to be paralleled by the Madeira-Mamoré railway—and the consequent effect in making rubber costly—the *Marconigram*, in its issue of October 29, says:

"The monetary loss each year from wreck and loss of rubber alone would go a long way toward building the Madeira-Mamoré railway, to say nothing of the toll taken of life due to drowning, disease, and the hardships incidental to the river life.

"Several months ago three *batelões** of rubber arrived at the head of the rapids of Lower Caldeirão. The *jeffe* in charge decided to shoot the rapids instead of making the portage. Two of the boats were tied up and the third double manned and started through the "Cauldron of the Inferno"—as the name implies. About half way through the boat struck a rock and was wrecked, three of the crew being drowned. The survivors succeeded in reaching shore, and with the addition of several more men from the other boats started down the second *batelões*. This also was wrecked, but little nearer shore than the first boat, and one man only lost his life in the water, though several others were badly cut and bruised by being tossed against rocks.

"There was still a third boat to be brought down, and, undismayed by their previous loss, this heroic little band of boatmen once more essayed the seemingly impossible, tempted fate a third time, and a third time their *batelões* went crashing on to a rock. No life paid the penalty this time, however, and all the crew succeeded in reaching shore, some more dead than alive. A little later the partially wrecked boat swung free of the rock and drifted ashore, though a portion of the valuable cargo was lost. The boat was later repaired and, with part of the cargo, which was recovered below the falls, resumed its voyage. It still had three rapids to negotiate before reaching Santo Antonio.

"The loss in this one accident was rubber valued at 300,000 milreis [= \$91,230, with exchange at 15 pence], two boats worth several thousand milreis each, and five lives, one of the injured crew dying after reaching shore. Most of the cargo saved was pulled from the water by men other than the boat crew, and to these had to be paid 25 per cent. of the value of the salvaged cargo.

"Below each *cachuela* there is generally found a house, the owner of which gains a livelihood by saving from the river wrecked cargoes of rubber. Some of these men are satisfied with the 25 per cent. allowed by law and custom, and redeem the salvaged rubber. Others, when opportunity offers, cut or burn out the stamp of the original owners, smoke in a patch of new rubber over the mutilated brand, and dispose of the ball at a good figure. The penalty for this, if caught, however, is heavy.

"This is one mention of the many wrecks that occur annually in the perilous stretch of water between Santo Antonio and Guajara-Mirim. At both the Upper and Lower Caldeirão, Girau, Paradao, Pederneiro, and other places where long portages of

boats and cargo are made, the bank above high water is dotted with graves.

"The heavy, heart-breaking work of dragging a big *batelão* across country, over rocks, and under a tropical sun takes its toll of life just as much as the swirling rapids.

"Along the smoother stretches of river between the rapids one often sees on the high bank a rude cross, sometimes six feet or more in height. An investigation discloses a small cleared patch under the hills, dotted with the inevitable mounds that seem to mark the path of the Rubber Man everywhere along the river.

"It is all part of the cost of rubber; part of the price of pioneering a newer and better order of things first made possible by such men of the rubber trade as Suarez, Arnold, Picollet, and many others."

* * *

PROGRESS ON THE MADEIRA-MAMORE ROAD.

THE wild rubber country of the Amazon valley continues to yield to the invasion of the engineer, backed by outside capital, lured by the great natural wealth of that region. As early as June last, 88 kilometers of the Madeira-Mamoré railway had been opened to traffic [see THE INDIA RUBBER WORLD, September 1, 1910, page 410], and rubber was actually transported by that line as a welcome substitute for the much obstructed Madeira River. On October 30 occurred the formal opening of an addition of 64 kilometers, making a total of 152 kilometers [= 94.5 miles] ready for traffic. The first train over this whole distance, starting from Porto Velho, and running to "Camp 25"—the station farthest up river—consisted of a locomotive, a third-class car, a buffet car, and two first-class coaches, all of American manufacture. On board were the principal engineering staff connected with the construction of the road, representatives of the contracting firm, and business men of Santo Antonio. The train was decorated with the colors of Brazil and Bolivia, and with them, as the *Porto Velho Marconigram* reports, "the silken folds of the Stars and Stripes—fluttering proudly, as though the far-away Republic was rejoicing that in the building of the Madeira-Mamoré she had been given the privilege of thus helping to draw closer together her two sister republics of the South."

By the opening of this last 64 kilometers of railway two more of the dangerous falls of the Madeira have been eliminated in the journey from Bolivia to the Atlantic. One more week of time consumed in the old *batelao* voyage is cut away. Rubber loaded on cars at Camp 25 in the morning can reach Porto Velho easily on the afternoon of the same day, a journey which has always taken about two weeks to accomplish. At Porto Velho the rubber can be loaded from the cars to ocean steamers and carried, without rehandling, direct to the United States or Europe.

Incidentally, another feature of progress in the Madeira River region is the construction of a telegraph line along the route of the railroad with the idea of reaching Bolivia and connecting with points in that republic beyond the limits of the railway. The train above referred to stopped at the barracks of the Brazilian troops engaged in the construction of the telegraph line, and the telegraph and railway forces were photographed in one group.

THE Firestone Tire and Rubber Co. (Akron, Ohio) have prepared for garage display a wall hanger containing a complete list of tire sizes and the corresponding air pressures; also, of the rims which the different sizes will fit. The Firestone people are building some larger and heavier tires than hitherto, which are interchangeable with present tires on their present rims.

*The *batelão* used in navigating the Madeira and its affluents was illustrated and described in THE INDIA RUBBER WORLD September 1, 1910 (page 413). THE EDITOR.

India-Rubber in Dutch Guiana.

By the Editor of "The India Rubber World."

FIRST LETTER.

An Amsterdam Promise.—Entering the Suriname River.—Nieuw Amsterdam.—Paramaribo.—A Tropical Holland.—Dutch Negresses.—The "Balata Man."—The Botanic Gardens.—"Hevea" Under Cultivation.—Various Rubber Planting Experiments.

THERE lives in Holland a genial and wealthy Dutchman with large Balata concessions in Dutch Guiana. I came in touch with him through these interests and made him the promise that if ever I came within hailing distance of the Guianas I would look up his partner resident there. This promise came back to me as our boat entered the mouth of the Suriname river and we had the prospect of a day of shore leave before continuing the journey to New York. After a resolve to keep that promise with courteous haste; to do the city in a cab, say How-do-you-do to the Director of Agriculture, to whom I had a letter, and to depart, I gave myself up to the witchery of the morning and the joy of the cool, refreshing breeze that made the air as balmy and exhilarating as a June forenoon in New England.

The river is very broad at its mouth and is guarded by a little tub of a lightship that in its gaudy paint adds color to the landscape. One notes at a glance that the country is flat, much like the coast of British Guiana, with the same tropical growths down to the water's edge always flanked by bright green mangroves standing high out of the wash on their myriads of stilt-like roots. The water of the sea as well as that of the river is of a light coffee color suggestive of the Amazon. Indeed it is the Amazon, as far as the sea is concerned, for the ever moving flood of that mighty river turns north as it emerges from the Brazils and follows the coast for many miles until it loses itself in the boisterous Carribean. It is due to this, indeed, that the great alluvial plains in Dutch and British Guiana exist. Beyond the memory of man the great river began its task of transferring the rich soils of the Brazils to the broad shallows beyond French Guiana, and as a result has filled in hundreds of square miles with soil as rich as any in the world.

On either side of the Suriname river one sees the managers' houses, the hospitals, and the coolie barracks that indicate banana, coffee, and sugar estates. A strong tide runs up the river and the tide line is marked by a ribbon of froth that extends from shore to shore, sometimes far up the river, other times almost out to sea. The morning we entered, the fresh water side of this line

was spotted and stained for hundreds of yards with tons of mahogany colored fish spawn. The first considerable settlement passed was Nieuw Amsterdam, the gathering place of the great barges of bananas that are there transferred to the fruit steamers. Beyond this and around the slight curve is the city of Paramaribo. Stretched along the river bank, well above the water's edge, it looked very Dutch, very substantial, and wonderfully attractive in its setting of palms and other distinctively tropical trees. That much of the soil had been rescued from the waters was apparent by the glimpses of long dykes and solidly built canal gates that are shut as the tide rises and opened as it ebbs, thus forever draining the plantations that border the river on either hand up to the foothills. The same system is employed in the town in lieu of sewerage, and what with the wash of the tropical rains and the cleanliness of the people, the city is very healthy and has not had a case of yellow fever in more than fifty years, except as such are brought in by visiting vessels from some less fortunate port. We passed safely the menace of the ancient Dutch fort that still frowns in grimness; had a fine view of the Government building, club house, and many warehouses that line the river front, and paused about two rods from the pier until the tide should rise high enough to float us up. We reached it at last, and after a conscientious customs man had examined with great care the small handbag containing only pajamas, toilet articles, and a single change of clothing, we were allowed to go ashore.

Instead of the usual crowd of clamorous cabbies anxious for employment, were only a few Dutch negro porters who said "Yes" to everything we asked, and walked us through the city streets to one hotel which was full, and then to another where we secured rooms and breakfast.

The city was fascinating in that it was different to anything in tropical America. The two and three story houses, painted white, with green blinds, the red tiled roofs, and the store signs all in Dutch, suggested a still, moist, tropical Holland. Then, too, the dresses of the black Dutch women. Huge stiff gowns, with short kimono-like capes. The skirt fitted over a great padded hoop passed around the body under the armpits making the wearer appear often humpbacked and always very short waisted and unwieldy. The garments of the brightest colors imaginable, stiffly starched and scrupulously clean, were worn with exaggerated pride.

The negresses also wear turbans, usually made of the same material as the dress, and the turban, or rather the way in which it is worn, is exceedingly informing. If the wearer is out calling



ENTERING THE SURINAME RIVER.



HARBOR AT PARAMARIBO.



OUR HOTEL.

peacefully and amicably it is worn one way; if an enemy approaches whom she desires to "cut," it is quickly shifted to another angle, and so on with many variations, all of which are as plain as print to the initiated.

Not having seen any horses, I ordered a carriage with considerable doubt, but it came, and I drove to the home of the head of the Agricultural Department. Once there I found that the man I sought was in Holland and his temporary successor was indisposed and politely begged me to call on the morrow. Reflecting that the morrow would see me on my way to New York I drove to the home of the Balata Man. Here I got a surprise. The Amsterdam partner had written about me, and I had been expected for two years. I must come to dinner that night and go over to the club and hear the music after it. Not only that but my plan for leaving the next day was out of the question. There were rubber plantations and all sorts of interesting things to see, and almost before we knew it the Balata Man was aboard the steamer, all of our luggage was chalk-marked by a polite official, and we had agreed to stay and were glad of it.

The Balata Man was apparently about fifty-five years old, erect, with black hair just beginning to silver, keen blue eyes, and was



MAAGDENSTRAAT (MAIDEN'S STREET.)

as florid and vigorous as an Englishman, and as hospitably generous as a Western American. Very much the man of the world, he spoke English, German and French in addition to his native Dutch, and besides this was an LL.D. He had been for thirty years in the colony and was reputed to be rich. Beside his balata interests he possessed large plantations, was interested in placer mines and knew much about English and American stocks.

He lived in a substantial brick house, the lower floor of which was given up to a spacious private office for himself, together with offices for a number of industrious secretaries and assistants. The floor above was presided over by his wife, a graceful, cultured, comely lady, possessed of a full knowledge of all his business affairs and taking a most intelligent interest in the rubber development that was then having its beginnings in the Colony.

We were invited to breakfast, tea, and dinner for every day of our stay and availed ourselves of this privilege many times. With two of his steam launches at our disposal, and the practical planning of host and hostess we were able to see more in a short time than otherwise would have been possible in a month's stay. This was notably so, as they both accompanied us on our trips, visiting the plantations, introducing managers, and incidentally through their wonderfully trained servants supplying most appetizing picnic lunches at frequent intervals.

We paid several visits to the Botanic Gardens, to reach which you go out Gravenstraat just at the end of the beautiful avenue of mahogany trees, by the old burial ground, and take the first narrow dyke road to the right. This leads one right into the midst of the gardens, which are close to the town and very beautiful. One might cover much white paper in describing the



SHOPPING DISTRICT, PARAMARIBO.



"HEVEA BRASILIENSIS" IN SURINAME.

avenues flanked with Royal Palms, clumps of Blue Gum trees, of Giant Bamboos and the great variety of flowering trees, shrubs and vines, but it was rubber we were in search of and rubber that we found. Of *Castilloa* trees, there were the biggest four year olds that I have ever seen, as large as the average eight year old on many plantations. They looked curiously immature in spite of their great bulk, with temporary branches twenty feet from the ground and bulging uneven trunks as if, mushroom like, they had shot up in a single night. It was to the *Hevea* that I turned, however, for I wanted to see how it grew on drained land of the Suriname type; I had good reason for this desire for it is an open secret that just as the tea planters in Ceylon turned to rubber while tea was still profitable, so the cocoa planters of Suriname are turning to the *Hevea Brasiliensis*.

The first plot examined was some two hundred four year olds, planted on broad dykes that were about twelve feet wide, between which ran drains four feet deep. The trees were planted along the edges of the dykes. The soil was a clayey alluvial, cracked on the surface because of the four weeks of drouth but still holding its moisture, and although the drains were dry the trees bore no evidence of suffering. A few of the best trees were eight inches in diameter, three feet from the

ground. Not far from here was another plot of *Heveas*, six to seven years old, where the drainage was from five to six feet. Only two of them had been tapped, the rest being kept as seed producers, and they were certainly doing their duty. This clump was right in front of the long low office buildings where the director and his assistants have their headquarters. In this office they showed us many samples of rubber prepared by them, from the *Brasiliensis*, the *Guyanensis*, and the *Castilloa*, and also gave us some very interesting photographs showing relative growths of trees under different conditions.

An experimental plot that does not exist in many botanical gardens was that of the *Minusops globosa*, the balata tree. These trees are slow of growth and it is not the present plan of the government to attempt to interest planters in their culture. It is possible, however, that some time in the future this planting may be of as much interest as the gutta-percha groves of Java.

A plot of some 200 *Funtumias* with their dark healthy looking leaves and their big green seed pods was also examined, but as these were too young for anything but the lightest tapping no records concerning their productiveness was obtained.

Perhaps the most interesting of the rubber exhibits in the Garden were the 20,000 *Hevea* seedlings, part of them on drained and part on undrained land. The former were so much larger and healthier that the most casual observer could not fail to note the difference. Our guide pointed out a minor leaf disease in them, but declared it was of no importance and that spraying with the Bordeaux solution cured it.

Many planters in view of the failure of *Hevea* seeds that are brought in from the far East, believe they would be much better to import stumps. It will interest them to know that this has been tried. The Botanical Department in Suriname brought in 80,000 stumps from Ceylon and from them secured only 4,000 trees. They learned further that they saved from 50 to 80 per cent. of the seeds that arrived in Suriname in the months of September, October, and November, but of those that came in February, March, and April, they saved only 15 per cent.

General planting in Dutch Guiana dates back certainly 200 years, but rubber planting is only about 12 to 15 years old. There was no thought of it until the disease known as "witch broom" developed on the cocoa, and the Panama and kindred diseases attacked bananas and lessened the profits in those remunerative lines.

About 13 years ago, therefore, the Waterland estate planted nine Para rubber trees, which were grown from a parcel of 100 seeds bought in London. Four years later certain other plantations secured stumps of *Hevea* trees from the Botanic Gardens and set them out. These stumps came from seeds that the government had imported directly from Brazil. In 1905



DUTCH NEGRESSES.

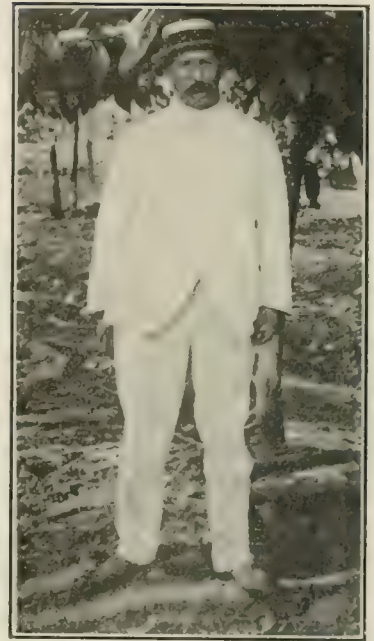
there were about 15,000 planted trees in the colony. The largest planting was 9,000 at V. J. J. J. and 1,000 at W. J. J. J. The lapse of another 5 years brings us up to 1910, when 30 plantations had planted *Hevea* and there were 165,000 trees growing.

In the meantime, as soon as the trees matured enough to tap, test tappings were made under various systems, herringbone, spiral and half-spiral, etc., and careful records kept. Measurements were also taken recording the growth of the trees. In the Botanic Gardens eight year old trees averaged 28 inches in circumference, 3 feet from the ground.

At Waterland eight year olds averaged 31½ inches in circumference; 12 year old trees at the same plantation varied from 35½ to 39½ inches in circumference. The latex on an average contained about 30 per cent. of rubber. For coagulation there was used a 10 per cent. solution of acetic acid. The trees here being the oldest in the colony were the first to be tapped. In 1905 they were tapped seven times and about a pound of dry rubber obtained. In 1908 they produced about 2¼ pounds of fine rubber and ½ pound of scrap. The year following they were tapped every

other day during the year, and the product was fine rubber 19½ pounds, and scrap 5 pounds, one tree producing about 3 pounds of rubber. It should be remembered that these were the nine original trees planted at Waterland and one had been injured, so only eight were tapped. During my visit other plantations were beginning to produce rubber a little. For example 50 trees on Nieuw Groud produced about 16 pounds.

The Government, which



THE ASSISTANT "AGRONOM."

had taken a great interest in stamping out the witch broom and had assisted in establishing banana plantations, was also alive to the colony's opportunity as a rubber producer. It had therefore purchased an old cocoa plantation Sloomwijk, and started to plant *Hevea* on quite a large scale. The plantation was excellently situated on the Commewyne river and contained about 1,200 acres. The soil was a stiff clay and ditched so that there was at least three feet of drainage. There were 500 coolies at work and the work of planting 200 acres a year to *Hevea* was going ahead very rapidly. The rubber was interplanted with cocoa, coffee, and bananas, about 100 to the acre, stumps 1½ to 2 years old furnished by the Botanic Gardens being used.

[TO BE CONTINUED.]

ONE indication of the progress of the city of Manáos, the rubber capital of the upper Amazon, is the existence there of a well equipped telephone service—the Empresa Telefonica de Manáos. The latest directory of this service, printed on one side of a large sheet, contains the names of 330 subscribers, including all the handlers of rubber in Manáos, the public offices, and leading professional men.

THE desirability of the Liberian coffee tree (*Coffea robusta*) for cultivation in the Federated Malay States has been much discussed of late, and in this connection it is of interest to notice in the Malayan newspapers advertisements of seedlings of this species for planting as a "catch crop" for rubber. One firm reported having orders for 50,000 coffee plants for delivery to rubber growers during October.



SIX YEAR OLD *HEVEAS*, BOTANIC GARDENS, SURINAME.

The India-Rubber Trade in Great Britain.

By Our Regular Correspondent.

THE changes that have occurred in the last month or so are of a very trifling nature, and it is common for rises and falls to take place without any good reason. As, however, the stock brokers say their only guide is the market price of fine Pará, shares are marked fractions up and down, according to pence movements in the raw commodity, though such movements may only have a remote bearing upon the

RUBBER MARKETS.

intrinsic worth of particular shares as investments. The fact is, rather too much is being made of the rubber share market, now that the boom has spent itself, and is not likely to recur at any rate in anything like the same intensity. However, every day we read in the papers, both London and provincial, that rubber shares are dull, lifeless, active, etc., as the case may be, while the amount of business passing may be much less than in the case of other descriptions of shares which are not considered worthy of special mention. By way of keeping the promotion business alive three new planting companies came out in November and were reported to have been favorably received by the public. With regard to two of them, the fact that the whole of the purchase consideration has been taken in cash has been adversely criticised in the press as being indicative of a want of faith in their future. Looking at the general situation on the stock exchange, one may say that the chief feature is absence of speculation and a steady investment demand for the best properties, a tendency which will eventually make the market bare of stock. At the time of writing we are in the buzz and stress of a general election, which has been dubbed on one side of politics as the "Dollar Election." I cannot enlarge on this topic without going beyond my legitimate sphere, but it may be referred to as causing some interruption in business and a diminution of dealings on the stock exchanges. Doubtless, also, it will cause promoters of new ventures to hold their hands for a time.

Would it not be more in accordance with the strict truth if brokers and experts, when reporting on the quality of special lots of *Castilloa*, *Funtumia*, and other non Pará rubbers, were to say something about the amount of moisture

RAW RUBBER.

present? One frequently reads of chairmen of meetings saying that a sample of their African rubber was valued at a higher price than fine hard Pará at the same date. This statement, perhaps without doing any real harm, is certainly apt to mislead the non-technical listener. I believe I am right in saying that in all the cases where this apparent superiority has been shown the special rubber has been practically dry, while the Pará with which it has been compared has contained its usual 20 or more per cent. of moisture. It would not be at all a difficult thing for the brokers or others who make these special valuations in behalf of individuals or companies to make the necessary allowance for the loss in washing so as to make the comparison between African and Pará rubber strictly accurate. Ceará and maniocaba rubber is not coming forward from East Africa as quickly as was expected. In the case of the Jequié company, the drought which was experienced is blamed for the failure of the tapping operations. With regard to these rubbers and their reception by the trade, it may be taken that they will find a good market. With Ceará rubber in the past the position has been much on a par with that of African rubber. The manufacturer was willing to use it if he could be assured of regular supplies. It has been the difficulty in this respect which has militated in the past against the wider appreciation of undoubtedly good brands of rubber. The manufacturer does not want to be always chopping and changing, especially in regard to certain mix-

ings, and I think it may be taken that if good supplies of Ceará rubber are assured this brand will at once find a ready sale. The large amount of nitrogenous substance or protein contained in Ceará rubber compared with other brands does not seem any disadvantage; at least I have not heard of any complaint on this head. At the same time, it can hardly be any definite advantage and no doubt those who are engaged in the coagulation on scientific lines will see to it that this component is kept at as low a figure as possible.

THIS is a new manufacture for Great Britain; indeed, I believe I am right in saying that it is new to Europe, though one or two

VULCANIZED FIBER.

continental works make a substance which is said to be practically similar to the American vulcanized fiber which has so far monopolized the market. The new concern of which I now speak is Sutcliffe, Limited, of Crumpsall Mills, Manchester. This is an old-established firm, making certain requirements for the cotton trade their principal specialty, being what are known as cans, which are used in every spinning mill. This firm is the largest maker of these cans in the world, their output being 1,200 per day. This particular industry only concerns us in that the can, which was originally made of metal and, indeed, is still so to a large extent, is now also made of vulcanized fiber in great part, and it was the difficulty experienced in getting suitable supplies of this commodity that led Messrs. Sutcliffe a year or two ago to embark in the manufacture themselves. The new Crumpsall mills which are devoted to this business were erected in 1907-09 and have a floorage of four acres. They are fitted with the most modern machinery and have a capacity of 45 tons per week, though this output has not yet been attained. The goods made represent all those required for the many and various applications for which vulcanized fiber has been found fitted, more especially as a substitute for vulcanite. The electrical industry is probably the largest consumer, for switchboards and the like, and it is being increasingly used in connection with the ignition apparatus of motor cars. For the mechanical engineer the substance is supplied, as journal bearings, thrust bearings, or washers for lathe spindles, brake shoes, rollers, and many specialties for textile mills. Besides the ordinary form, which resembles vulcanite, a flexible form finds a large application for packing, especially in hydraulic presses. It swells when immersed in water and is found useful for pump valves, tap washers, and so on. The old-established American firms can hardly, I imagine, view this new British factory with perfect composure as far as their export trade is concerned. I understand that certain improvements have been made in the manufacture at Crumpsall and that the material is not exactly identical with the original vulcanized fiber which has been on the market for more than 20 years.

PROFESSOR VICTOR HENRI, of the Surbonne, Paris, has communicated to *Le Caoutchouc et la Gutta-Percha* an interesting article on this subject embodying the

ACTION OF LIGHT ON RUBBER.

results of his experiments made more particularly with regard to balloon fabrics. It is the chemically active or ultra violet rays which exert the deleterious action, an action which has been proved to be simple oxidation. Although I cannot at the moment give the reference, I have an idea that in a general way this has already been shown by an earlier observer, but that does not take all interest away from the present research which was applied to. Thin sheets of rubber, cut sheets of various makes, sheets evaporated from solution, also dried rubber latex, were submitted to the ultra violet rays for a number of hours. In the case of unvul-

canized rubber, deterioration set in in 20 hours, while with vulcanized rubber 48 or 72 hours' exposure was necessary. Further, mineralized rubber resisted better than pure rubber. A rather important result was that rubber recovered from petroleum solution was much more rapidly attacked than that which had not been in solution. This is certainly in agreement with the general contention of the manufacturer that extraction processes for raw rubber, *i. e.*, where the rubber is separated from extraneous matter by means of a solvent which is subsequently distilled off, give an inferior product. It also supports the contention as to the superiority of cut sheet over spread sheet for many purposes. Of course, one might easily exaggerate the importance of Mr. Henri's results. They have a distinct bearing upon balloon fabrics, because such are of thin material and naturally much exposed to light. Yet doubtless there are many other applications of rubber even where the material is of much greater thickness that his results point a moral. He recommends that only vulcanized rubber should be used for balloon fabrics, and that the cloth be coated with a yellow coloring matter. Further, he suggests the incorporation of some yellow coloring matter in the rubber itself. I believe I am right in saying that this last suggestion has already been carried out in some other classes of goods; at any rate, a yellow protective coating has been applied to tires. And in the case of one firm, at any rate, it has long been customary to put yellow paint on the windows of the room where a certain important class of vulcanized rubber goods is stored.

DR. W. A. CASPARI, who was at one time engaged in research work at the National Physical Laboratory, near London, and was for a short time a consultant in rubber chemistry, is now head of the laboratory at the Persan-Beaumont (France) works of the India-Rubber, Gutta-Percha and Telegraph Works Co., Limited.

PERSONAL MENTION.

Mr. A. W. Carpenter, sole proprietor of the late Charing Cross Bank, which has recently failed so disastrously, has returned the Alperston Rubber and Vulcanizing Works as one of his assets, though I doubt if they will realize the figure put against them in the provisional balance sheet. At these works Mr. Carpenter has been making a special solid ring tire. The site of the works is near treble, some 12 miles from London, and the buildings have had a rather checkered career. It is now a good many years since they were occupied by the Volenite Co., Limited, about the career of which it would perhaps be unkind to dig up the details at this time of day. Other concerns also found a home there before the tire company took them over and enlarged them. This, of course, is only one of Mr. Carpenter's many commercial activities.

Mr. Alfred du Cros, of Dunlop Tyre connection, has retired from the representation of the Bow and Bromley division, London, in Parliament. He was a Unionist.

A similar step has been taken by Sir Thomas Barclay, the well-known company director. At the last election he was returned as the Free Trade member for Blackburn, which means that he is a Liberal in politics. Sir Thomas is chairman of some rubber plantation companies, as well as of the Premier Reforming Co., Limited.

THE article on this subject by Mr. Wilmer Dunbar in the November issue of THE INDIA RUBBER WORLD is of considerable interest because it deals with a topic on which widely diverse views are held, as witness the remarks of the American manufacturer appearing as an appendix to the article. Personally, I am not in a position to add anything of weight to the discussion, and it is a forlorn hope that any British manufacturer will volunteer his views. Outside, the rubber manufacturer, refers to the use of balata in regard to the well-known belting and goes on to make the categorical statement that it has been found to be a good substitute for gutta-percha in the insulation of sub-

marine cables. So far as English practice is concerned I think this is doubtful, though at the same time no definite statement on the point has to my knowledge been made by those who have the secrets of the big cable-making concerns on the Thames in their keeping. For some years an English company has been selling or endeavoring to sell a proprietary substance of very similar characteristics to balata for admixture with raw rubber, and the claims made for this substance as an improver of raw rubber are similar to what Mr. Dunbar claims for balata as a component of rubber mixings. Without professing to be in the secrets of our manufacturer on this point, I think I am right in saying that the addition of balata to rubber goods, such as tires and tubing, is practically unknown. Certainly it has been used in the case of particular steam packing or jointing materials, where the rubber substance is either only slightly vulcanized or not vulcanized at all. The fact that balata has doubled in price in the course of a year or two and the increasing demand for belting purposes is all against its further use in rubber mixings, and then there is the ever-present danger referred to by Mr. Dunbar of pieces of wood or bark still remaining after the washing operation, necessitating very careful examination before use. It is again said that balata can be vulcanized; well, so can fibers and oils, according to trade nomenclature, but compared with the great difference between pure and vulcanized rubber is there any real alteration in the chemical and physical properties in balata after vulcanization?

GUTTA-PERCHA TISSUE PRICES.

BY THE UNITED STATES CONSUL GENERAL AT HAMBURG.

ONE of the principal manufacturers of gutta-percha tissue in Germany states that it is produced only for the American trade, and is not required in Europe at all. It comes in pieces 1 yard wide and usually 10 pounds in weight. The manufacturer referred to does not put it up in rolls of 50 or 60 pounds, but doubtless could do so if necessary.

It is claimed that there is no agreement as to prices between the two leading manufacturers here, and that, in fact, competition is so lively that one of them has been shipping little to the American market for about a year, in consequence of the appearance of new producing concerns in the United States market, where prices have been put down to an unprofitable level.

One firm quoted on October 21, 1910, for direct shipment per kilogram [= 2.2 pounds], grade No. 1 at 90 cents, No. 2 at \$1.33, and No. 3 at \$1.57. These prices are said to be quite special and subject to sudden change, as the cost of raw materials is very uncertain.

"HEVEA" RUBBER AND SALT WATER.

IN an official report United States Consul Arthur J. Clare, of Georgetown, British Guiana, advises planters of *Hevea* rubber, and investors in planting companies, that great care should be taken in "the location of plantations, as *Pará* rubber will not give good results on coast lands. To be successful plantations should be far enough up the river to be beyond the influence of salt water."

There is no doubt that this advice is given in all honesty, but it is mistaken. The *Hevea* will flourish on coast land close to salt water, as has been proved in Ceylon, in the Malay States, in Dutch Guiana, and, indeed, all through the lower basin of the Amazon. It is necessary, however, that planters remember that the soil should be rich, that there should never be less than three feet of drainage, and that there should be abundant moisture.

THE Vallambrosa Rubber Co., Limited, report that the amount of rubber harvested for the six months ending September 30, 1910, was 202,200 pounds, against 167,902 pounds for the corresponding period in 1909.

BALATA IN RUBBER GOODS.

Specifications for the Purchase of Materials--I.

By Frederic Danmerth, Ph.D.*

PROBABLY the most important work of the chemical engineer consists in devising methods of testing and finding out the various properties of materials which render them valuable and useful; and furthermore the assembling of these various properties in the form of specifications for purchasing. In this important phase of his work he is aided to a considerable extent by the ground which has been covered in years past by our large railway corporations and by the deliberations of such representative bodies as the American Society for Testing Materials, the National Fire Protection Association, and the International Congress of Applied Chemistry. Last, but not least, should be mentioned the extensive specifications for delivery which have been issued by the several departments of our own as well as foreign governments. All the literature issued by the specification bureau of a large corporation does not necessarily pertain *directly* to this subject, although it is a product of the observations made by that bureau. The five more important types of publications thus issued may be defined as follows: (1) Specifications showing properties required, by the purchaser, of materials to be delivered.

(2) Methods for making the chemical analyses and determinations referred to in the specifications.

(3) Methods to be followed in the purchase of supplies.

(4) Instructions to producers and supply houses as to the size of packages, character of the containers, and the mode of delivering supplies.

(5) Instructions to employés, showing methods of mixing ingredients for paints, etc.

(6) Instructions to employés, showing precautions to be observed in the use of supplies, to prevent waste.

In an address delivered several years ago before one of our national institutes the late Dr. Dudley in discussing the plan followed by him and his associates said, "First try to find out what you want." This desire arises from the fact that some difficulty has arisen in the processes or the service of a machine, some parts of constructions fail, or some material at present in use does not give satisfactory results, and an investigation is made to see if the cause of the difficulty can be located; or some product which is being largely used and which is being furnished by *different* makers, is believed not to be of equal quality from the *different* sources; or it is desired to standardize certain practices and make them uniform in all the mills of the corporation. As an element in this last problem, the same quality of material must be furnished and used.

These and other elements lead us to make investigations into the nature of the commercial products involved, and finally result in specifications. The specifications, after being made, are placed in the hands of a purchasing agent, and by him are made a part of the contract on which materials are bought. Shipments of material in accordance with this contract being received, each shipment or specified definite amount is sampled, and the samples examined in accordance with the specifications. If the samples stand the test, the material is "accepted" and paid for; if not, the material is "rejected" and returned to the makers.

The question now arises: "How shall a specification be made?" It is very obvious, after a casual observation of the case, that in every specification two parties are primarily interested—the producer of the material and the buyer or consumer. It has in fact been said that a specification was an attempt on the part of the consumer to tell the producer what he wanted. As a result of this view, our early specifications did little more

than define the "qualities of the material." Our modern specifications go beyond this and indicate the method of sampling, state how much material one sample shall represent, and prescribe methods of testing either in whole or in part. The early antagonism of the producer and the consumer later gave way to more weighty questions such as: How much material shall be involved in one test? Would it not be advisable to buy in lots of the same size as the test involves? How shall samples be drawn? Shall the quality of the shipment be determined at the mill where the material is made, or shall it be done after the shipment is received? In the former case an inspector (representative of the purchaser) must be employed.

In many cases it is found that those who ultimately receive the material, such as the storekeeper, or the foreman of a department, can frequently make certain inspections better and cheaper than any one else. Accordingly they must be supplied with proper instructions.

It being thus necessary to incorporate information for a number of different parties, the modern specification has in many instances become rather lengthy, and at times apparently unwieldy. The desire on the part of some manufacturers to deliver the lowest possible quality on a contract, and the endeavor of the testing chemist and testing engineer to enforce the conditions of the specification, frequently give rise to the wish that the specifications had been even more definitely worded. In preparing any specification, the aim should be to incorporate information which may be needed by (1) the manufacturer, (2) the testing chemist, the testing engineer, the inspector, and (3) the persons who are to use the material. On the other hand, care should be taken to eliminate all facts or statements which have no direct reference to the specification in hand.

The remarks just made will no doubt be followed by such questions as: "Should the specification cover the chemical method involved in the analysis of material?" "should it cover the methods of testing?" "should it include complete instructions for the inspector, covering every point?" These questions may be answered by the following statements, or rules:

A specification should not attempt too much nor be too complicated. Well known methods of analysis or methods of testing should be referred to only in a general way.

Well known precautions to be observed by the inspector should not be explained in detail.

New methods of analysis and testing, not well known, must be described in detail, or reference must be made to the original publication.

Analyses such as are not conducted in the same manner by all chemists should be described and issued in separate form and made a part of the specifications.

When drawing up a specification, do not incorporate in it all that you know about that particular subject.

Do not put too many restrictions into the specifications; and state as few tests as are necessary to yield the product required.

Do not make the limits too severe. If you tie the manufacturer down to the extreme limit, you place yourself in a position of absolute antagonism to him.

It is better to specify a good average material, and get the necessary protection in machines and processes by a more liberal factor of supervision and technical knowledge, than to insist on extreme limits, which can only lead to constant friction, and a demand for concessions.

Do not think that the most perfect specimen of a certain product should be made to represent the total output of the works.

*Consulting Chemical Engineer, Philadelphia.

The use of such extreme figures is one of the worst possible mistakes observed in some specifications.

The first step to be taken when preparing to draw up a complete specification is the gathering of information from all available sources. Samples may be gathered from the works, and data attached thereto, stating whether the results obtained from the same were good, fair, or bad. The chemical and physical properties of these samples are carefully noted, along with their price and date of purchase; their quality has of course been decided by actual service.

In certain cases, the service does not give so much information, or it takes a long period to determine which is good and which is undesirable. In such cases, general knowledge is made use of, the resulting specification being designated as "provisional," and the material delivered on it is carefully watched, to see how it behaves. In some cases, direct, positive experiments are made with samples which have been obtained and analyzed, or with material which has already been purchased. In such instances it is of course possible to obtain more complete records than when older samples are analyzed.

Those samples which fail to give good results should be very carefully examined, in order that their objectionable features or constituents may be ruled out when drawing the specifications. In the accumulation of information it is frequently desirable to pay a visit to the parties who make the materials involved, and learn from them as far as possible, the grade or quality which it is possible to maintain in commerce, when proper precautions are used. No specification should be drawn before a fair knowledge of the manufacturing process (for the material) has been obtained.

Another important factor which enters into the framing of specifications is the information obtained from experienced men as to the characteristics and the behavior of materials which have been used for many years. As an example of the care taken by representative corporations in conducting all these preliminary investigations it might be stated that the railroad companies frequently work for two or three years before printing final specifications.

After all possible information has been accumulated, it is digested and framed into a tentative specification, strictly omitting an exposition of all the knowledge which has been obtained. If a specification is issued for a hitherto untested material, it may sometimes be necessary to alter the method of manufacture, and if the change is too drastic, the manufacturers of that material may resist any attempt at delivery on specification. This would result in a worse condition, for the consumer may then find it impossible to supply his wants in the market.

After the preliminary specification is drawn, the chief chemist, the mechanical engineer, the general superintendent, and the purchasing agent confer and criticise the draft, making corrections and suggestions, adding at one place and eliminating unessentials at another. The printed copy is now placed in the hands of the foremen of the several departments in the mill where the material is to be used. It is also sent to all those manufacturers of the material involved from whom the purchasing agent desires to buy. In both cases the recipients are asked for the freest possible criticism (from their standpoint).

It is a matter of frequent experience that certain manufacturers state that their "brand" is a sufficient guarantee, and that they decline to meet specifications; others desire that a particular brand be specified (no doubt, in order to eliminate competition); while still others, who have not perfected their methods of manufacture, would like to see the specifications bent in order to meet the low quality of their product.

THE Peat-Rubber Substitutes, Limited, was registered November 8, 1910, with £500 capital, to deal in the commodity referred to in the title, the registered offices being at 21, Great Winchester street, E. C., London.

A PROPHETIC VIEW OF RUBBER.

[NEW YORK "JOURNAL OF COMMERCE," APRIL 22, 1910.]

THE most conspicuous example of advance in price of an article of common use is that of india-rubber. About that there is no mystery, and yet there is the usual variety of explanations of the cause of higher prices for articles made of rubber. The price of the best grade of Pará rubber in this market in the last few days has reached \$2.90 a pound, and in London Ceylon rubber, which is inferior to the Brazil product, has been sold as high as \$3.10. In April last year Pará rubber was quoted at \$1.26, and in April, 1908, at 84 cents. The cause of this advance has undoubtedly been a large increase in the demand without anything like a corresponding increase in the supply. The president of the United States Rubber Co. is quoted as saying that 60 per cent. of the world's output of this material is taken by the United States and that one-half of this goes into automobile tires.

The great increase in the manufacture of automobiles and the constant demand for new tires for old machines go far to explain the extraordinary advance in the price of the crude material. These tires are said to cost three times as much as they did less than a year ago, but the prices of goods in which the material is a comparatively small item and workmanship a much larger one, show no similar advance, but are affected in varying degrees. The natural effect of the greatly increased demand and high price is to give a strong stimulus to the effort to produce on a larger scale. This is not shown so much in Brazil and other Latin American countries as in the Far East, where plantations are cultivated, and where labor is plentiful and cheap. There it is possible to increase production almost indefinitely, but it requires four or five years' time to bring new plants to the stage of yielding much of the gum.

It is the greatly increased demand, the difficulty of increasing supply rapidly to meet it, and the consequent high price that has stimulated the formation of many new plantation companies and the extraordinary speculation in the shares which has caused so much excitement in London. There is no doubt that this promising, exploiting and speculating has been overdone, and is in danger of reaching a climax that will be followed by collapse, to the destruction of the weaker companies and the ruin of unwary speculators in shares who have ventured beyond their depth. It is not the spirit of investment in the hope of large profit a few years hence that developed this "speculative mania" for rubber shares so much as the gambling spirit excited by the rapid advance in the price of these shares occasioned by the eager desire to obtain them and profit by that same advance.

That lure cannot hold out indefinitely, and when the climax is reached it will be found that many have bought at prices that had no commensurate present or prospective value, and there will be disastrous recessions. The fact will remain that reasonably capitalized ventures with productive plantations in view will reap large profits in time; but the result of the increase in supply when the new output is realized must be a fall in prices far below the present level.

KIESELGUHR is the subject of a report by the United States consul at Stavanger, Norway (Mr. P. Emerson Taylor), who states that in job lots of 100 tons of the quality known as "No. 2c. (calcined)," the price will be \$14.75 per ton, cash, f. o. b. ship at Stavanger. To this price, however, must be added the cost of sacks, making the total cost per ton \$18.13. This is described as being the quality suitable for insulating purposes.

It is reported locally at Webster, Massachusetts, that manufacturing is expected to begin by November 1 by the Webster Felt and Rubber Co. [See THE INDIA RUBBER WORLD, October 1, 1910—page 31.] The machinery is reported to have been fully installed.

Mexican Rubber Plantation Notes.

By a Special Correspondent.

THE favorable growth of trial plantings of *Hevea brasiliensis* in different parts of Mexico has led to serious consideration of the introduction of this genus as supplementary to the indigenous *Castilloa*, and practical commencements are now being made in this direction. On "El Palmar" estates, near Córdoba, lately acquired by a British company and now under the technical management of Mr. James C. Harvey, a planting of considerable extent is to be made with seed imported from the Far East, while on "El Dorado" estate of The Land Co. of Chiapas (Mexico), Limited, a similar venture is being made—in this case stumps having been procured from Ceylon and put into nurseries upon arrival, for planting out in due course.

This latter concern, by the way, has inaugurated an active policy of development, on broad lines, of the immense territory which it owns in the state of Chiapas. In addition to devoting 250 more acres to *Castilloa* (500 acres being now under cultivation), the company is erecting a sawmill on the above mentioned property, excellent timber being abundant on the same and on adjoining lands which the company has reserved for its own purposes. The Pan-American railway passes through the estate, and a station will be built upon it. The present manager of the company, Mr. Cecil J. Wachter, under whose direction all planting operations are conducted, has had some eight years' general agricultural experience on the western ghats in southern India, and has also been engaged in planting Ceará rubber (*Manihot Glaziovii*) in British East Africa. He is therefore well qualified for the work which is being carried out under his régime.

The Land Co. of Chiapas are experimenting with four varieties of "manicoba"—namely, *Manihot Glaziovii*, *M. dichotoma*, *M. heptaphylla*, and *M. Piahyensis*—on their "San Vicente" estate, situated about 20 kilometers from Tuxtla Gutiérrez, where the physical conditions seem to be suitable for the same, the elevation being 2,900 feet above sea-level and the rainfall 45 to 50 inches per annum. In other districts the company are planting henequen and going in for cattle breeding, while a new coffee zone is being opened up by the construction of a road from Pijijiapam, on the Pan-American railway, to the town of Miraflores on the eastern side of the Sierra Madre, to the cost of which the company is contributing.

Considerable interest attaches to the present visit to Mexico of Colonel Sir Thomas Hungerford Holdich, K.C.M.G., K.C.I.E., C.B., R.E., F.R.G.S., chairman of the Soconusco Rubber Plantations, Limited, of London, owning the "Doña Maria" estate in Chiapas. Besides having had a distinguished career in the British army as an officer in the corps of Royal Engineers, Sir Thomas has rendered important services to geographical science by his surveys in Afghanistan, for which he was awarded the founder's medal of the Royal Geographical Society. He acted as a commissioner on the settlement of the Argentine-Chilian boundary, and has also done a good deal of literary work, among which may be mentioned an article on Surveying for the new edition of the "Encyclopædia Britannica," which is about to be issued by the University of Cambridge, England. Sir Thomas spent a couple of weeks in the capital, where he was received in special audience by President Díaz, and entertained by the British minister and other prominent persons in the official world of Mexico City. He is now on the plantation, whence he will proceed to Tapachula, on business connected with The Land Co. of Chiapas (Mexico), Limited, of which he is also chairman.

A short time prior to the arrival of Sir Thomas Holdich, Mr. Ashmore Russan, one of the board of directors of the Soconusco Rubber Plantations, Limited, and a well known rubber expert, came out from London on his own initiative with the object of

personally investigating the situation. This gentleman found things at "Doña Maria" in so unsatisfactory a condition that he immediately removed the then resident superintendent, who had been appointed by Dr. Olsson-Seffer, the promoter of the company. The latter no longer has any connection with the company, and, as a matter of fact, never did have any legal status with it.

It has transpired that the Amistad Rubber Plantations and Estates, Limited, of London—also promoted by Dr. Olsson-Seffer—does not own the "Amistad" plantation (which was the most important of the group of properties embraced in the flotation, as the name of the company would suggest), that estate having been purchased by American interests some time before Dr. Olsson-Seffer had complied with the terms of the option which he held upon it, or those of the sale which he was then negotiating. It remains to be seen how this *impasse* will be bridged.

Among various rubber plantations in Mexico lately transferred to British owners is that of "La Esperanza," situated near the town of Tierra Blanca, state of Veracruz, and with which Mr. George Cullen Pearson (whose name will be familiar to readers of THE INDIA RUBBER WORLD) was formerly connected. A few years ago the estate became the property of The Mexican Rubber Co., Limited, of London, and Mr. Pearson has since resided in England. Mr. H. E. Levesley, who was associated with Mr. Pearson in this enterprise from its inception, and under whose immediate personal supervision the whole of the development work was done, remained on the estate as manager. During the recent rubber boom in London the property again changed hands (this time to a private individual), Mr. Levesley continuing to act in the same capacity for the new owner. The estate comprises 3,200 acres of land, only a portion of which has been cleared, with some 150,000 planted rubber trees (*Castilloa elastica*), ranging in age from seven to eleven years. Five thousand pounds of rubber were shipped from it last season (tapping from August, 1909, to March, 1910), the best price secured on the London market having been 10s. 4d. [= \$2.48] per pound, when fine plantation Pará was quoted at 11s. 9d. [= \$2.82].

No planter in Mexico has done more conscientious or more efficient work than Mr. Levesley. Due to the thorough care exercised in every detail of its preparation, the rubber which he has turned out has been of a remarkably high grade, as the figures above sufficiently attest; and he has produced some by a special process of his own, without the aid of any coagulant, samples of which were mistaken by a leading firm of brokers in London for fine Pará.

With regard to the revolutionary movement which has lately developed in this country, and of which some very exaggerated reports have been published by certain newspapers in the United States, it may be observed that at this date quiet has been restored, and general confidence is felt in the ability of the administration of President Díaz to effectually suppress any further seditious action that may be attempted in any quarter. It may be added that where conflicts have occurred neither Americans nor other foreigners have been molested, the discontent manifested being purely political.

Mexico, December 14, 1910.

THE United States consul at Alexandria states that the new Egyptian cotton crop approximates 700,000,000 pounds. The yield last year was about 500,000,000 pounds. The Egyptian government has made a report showing 1,603,266 acres under cotton this year, as against 1,456,187 acres last year.

Rubber Planting in the East.

FEDERATED MALAY STATES RUBBER CO.

CONTINUED improvement in results is shown in the report of Federated Malay States Rubber Co., Limited, S. A. Belge, of Antwerp—the estates of which are in the Federated Malay States—for the fifth fiscal year, ended May 31, 1910, and presented at the annual meeting on October 26. The salient features of the company's reports during the five years may be summarized as follows:

	1906.	1907.	1908.	1909.	1910.
Yield (pounds)	13,322	32,175	66,725	126,512	293,066
Net profits (francs).	74,903	173,980	180,061	645,341	2,129,936
Dividend	5%	8%	8.5%	24%	80%

The average yield per tree tapped (100,758 trees) during the year was 2.9 pounds—without reference to their age or the number of times tapped—against 1.98 pounds, for a smaller number of trees, in the preceding year. In the year 1907-08 the average was 2.6 pounds, but the number of trees in that year was still different. In 1909 the average from 17,148 trees was 5.5 pounds. "The oldest trees" are mentioned as having yielded an average of 9.18 pounds in 1910, against 8.25 pounds in 1909. As pointed out already [see THE INDIA RUBBER WORLD, December 1, 1909—page 85], it would be most desirable if some such company would isolate a certain number of mature trees and inaugurate a record of yield and some system of arriving at the cost of production, to be maintained year by year.

The report says: "A new method of tapping, successfully practised by other estates, has been adopted on our plantations. The trees are now tapped in half herring bone upon a quarter of their circumference, instead of, as formerly, in full herring bone on half of their circumference. The cuts are made 16 inches apart, but their number varies according to the size of the tree. Having convinced himself by experiments made upon other plantations, that the tapping of trees 3½ years old is in no way harmful either to their growth or to their health, Mr. Skinner has introduced this system in our estates."

During the year the capital of the company was increased from 2,000,000 francs to 2,100,000 francs [= \$399,000, gold], with the aid of which they were enabled to acquire desirable rubber properties from the Société Financière des Caoutchoucs. Mr. E. B. Skinner, the former efficient manager of the Federated Malay States company, had resigned to become connected with the Financière des Caoutchoucs, but by reason of the new arrangement the Federated company will continue to benefit by Mr. Skinner's great experience.

The Federated Malay States Rubber Co., Limited, in addition to its own production of rubber during the year ended May 31, 1910—293,066 pounds—handled 321,646 pounds from neighboring estates in preparation for market, making a total of 614,712 pounds of rubber prepared by the Federated company. This handling of outside rubber doubtless added to the year's profit of the company, though the report contains no information on this score.

SELLING GOVERNMENT RUBBER PLANTATIONS.

PERHAPS the most widely advertised rubber plantation ever formed has been that of the Indian government at Charduar, in the province of Eastern Bengal and Assam. This was started in 1873 by the conservator of forests, and the details presented in the annual reports of that official found their way in one shape or another into many thousands of newspaper publications, often losing entirely their original form and meaning. It was made to appear often that the Indian government had become exceedingly large producers of rubber. The fact is that the plantation was not formed for commercial purposes, but mainly for scientific study, though of recent years some ship-

ments of rubber well prepared have brought good prices. There are, however, only about 25,000 to 30,000 planted trees on the premises, and these are of the *Ficus elastica* species, which is now less favored for planting than the *Hevea*. At any rate, rubber planting having now passed the experimental stage, the government has decided not to devote further effort to the matter, and the Charduar plantation is offered for sale or lease.

The government *Hevea* plantation at Mergui, Burma, formed during the administration of Lord Curzon as Viceroy of India some ten years ago, was sold recently to Mower, Cotterell & Co. for 2,250,000 rupees [= \$729,875]. The original decision was to plant 10,000 acres; how much was actually planted has not been stated recently.

COMPARATIVE RESULTS.

BUKIT RAJAH RUBBER CO., LIMITED—FEDERATED MALAY STATES.
Business year ends March 31:

	1907.	1908.	1909.	1910.
Yield (pounds)	118,982	163,521	210,081	314,778
Selling price, gross.	5/3.62d.	3/8.87d.	4/9.84d.	8/6.47d.
Dividends	30%	30%	55%	150%

Trees tapped last year, about 125,000; average yield per tree, 2½ pounds. Total number of trees standing, 290,000. Estimated yield this year, 360,000 pounds. The gross selling price realized gives an average of \$5.19 per tree; the disbursement in dividends about \$1.50 for each pound of rubber collected.

VALLAMBROSA RUBBER CO., LIMITED—FEDERATED MALAY STATES,
year ended March 31, 1910:

	1907.	1908.	1909.	1910.
Yield (pounds)	156,922	225,302	281,183	371,316
Selling price, net.	5/1.5d.	3/7d.	4/8d.	7/11d.
Dividends	55%	55%	80%	250%

The cost of tapping, coning, packing, and transportation is reported at an average of 8.63 pence [= about 17½ cents] per pound.

RUBBER PLANTING IN BURMA.

WRITING from Victoria Point, Lower Burma, Mr. A. B. SNOW advises THE INDIA RUBBER WORLD that nowhere else is rubber being planted so cheaply as in that country. He estimates that the cost of planting say of 2,000 acres in *Hevea* and maintenance for five years—at which age the trees should become productive—need not exceed £6 [= \$30] per acre. He mentions planted trees five years old and now 27 inches in girth, three feet above the ground, as producing ¾ pound per tree. Transportation facilities are referred to as good and there are telegraph communications. Mr. Snow writes: "The climate is the best I have ever seen."

LABOR IN THE RUBBER FIELD.

REFERRING to the labor situation in connection with rubber culture, Mr. Stuart J. Fuller, for several years United States vice consul general in Hongkong, and who has made a study of Chinese conditions in general, when recently interviewed at Colombo by the *Ceylon Observer*, was of the opinion that the emigration of Chinese laborers to the English colonies would not be opposed by that government when supervised by the British authorities at Hongkong. Mr. Fuller said: "Rubber plantations need never fear for labor as long as they have the Chinese to fall back on. They are very glad, indeed, to go, for they can make more money than at home." Mr. Fuller has lately been appointed United States consul at Gothenburg, Sweden.

THE Fiji Times hears that an English syndicate has been formed for the cultivation of rubber extensively in the Fiji Islands.

Recent Patents Relating to Rubber.

UNITED STATES OF AMERICA.

ISSUED NOVEMBER 1, 1910.

- N**O. 974,124. Tire for vehicles. [Pneumatic, with steel armor.] A. Crowe and J. E. Kuzel, Youngstown, Ohio.
 974,134. Tire healing compound. H. S. Griswold, Phoenix, Ariz.
 974,158. Life preserver. A. H. Khint, assignor of one-half to S. Bishop—both of San Francisco.
 974,178. Tire fastening device. W. B. Owen, Price, Utah.
 974,250. Vehicle wheel. [With pneumatic tire.] E. J. Estey, Apponaug, R. I.
 974,251. Demountable rim. *Same*.
 974,294. Surgical bandage. E. M. Pond, Rutland, Vt.
 974,303. Cushion tire. E. C. Shilling, Columbus, Ohio.
 974,320. Wheel. [With pneumatic cushion around the hub, and elastic tread.] H. E. Walker, Detroit, Mich.
 974,602. Tread for pneumatic tires. J. C. Schleicher, Mount Vernon, N. Y.
 974,713. Vehicle wheel tire and rim. S. L. Simpson, assignor to The Simpson Specialty Co.—both of Cleveland, Ohio.
 974,714. Fiber tire for vehicle wheels. *Same*.
 974,770. Removable rim for vehicle wheels. A. N. Hood, Boston, assignor to Hood Rubber Co.
 974,771. Built-up pneumatic tire. P. Trudeau, Santa Ana, Cal.

Trade Marks.

- 50,805. H. W. Johns-Manville Co., New York city. The letters *J—M*. For brake band linings.
 51,154. Imperial Rubber Co., New York city. The word *Irco*. For cotton and rubber lined hose.
 51,155. Imperial Rubber Co., New York city. The word *Challenge*. For cotton and rubber lined hose.
 51,639. The Vulcanized Rubber Co., New York city. The word *Vulco*. For rubber combs.

ISSUED NOVEMBER 8, 1910.

- 974,796. Vehicle wheel rim. S. A. Huntley, Kansas City, Mo., assignor of one-third each to G. W. Slater, J. M. Benham, Oakland, Cal., and W. E. Otis, Jr., Reno, Nev.
 974,825. Anti skidding device for tires. J. E. Redmond, Butte, Mont.
 974,855. Fabric. [Made of strands which have been impregnated with a vulcanizable gum compound.] P. L. Bousquet, Akron, Ohio.
 974,861. Tire. [Pneumatic.] B. B. Dawson, Lodge, Va.
 975,137. Removable wheel rim for pneumatic tires. R. Kronenberg, Ohligs, Germany.
 975,147. Hose reel. S. M. Marshall, Clinton, Mass.
 975,207. Tire for road vehicle wheels. R. J. Caldwell, New Southgate, assignor to Pneuematic (1910) Limited, London.
 975,220. Vehicle tire. S. A. Douglas, assignor of one-half to C. L. Anderson—both of Ardmore, Ohio.
 975,245. Hose reel. G. M. Hughes, Buffalo, N. Y.
 975,258. Pneumatic cushion furniture. W. E. Kurtz, Oakland, Cal.
 975,309. Apparatus for vulcanizing rubber boots and shoes. P. J. Wren and F. T. Comee, Woonsocket, R. I.
 975,325. Sectional emergency tire. W. Budesheim and J. D. Stinchcomb, Maryland, Md.
 975,344. Rubber type base. H. S. Folger, Chicago.

Trade Mark.

- 51,151. Imperial Rubber Co., New York city. The word *Supreme*. For cotton and rubber lined hose.

ISSUED NOVEMBER 15, 1910.

- 975,397. Shoe heel. J. Colbert, Arlington, S. C.
 975,430. Umbrella carrier. [With main loop member of elastic material.] G. V. Humma and C. M. Hafer, Reading, Pa.
 975,453. Wheel for motor and other road vehicles. H. Perrins, Smethwick, England.
 975,539. Resilient tire. F. Lamplough, London, England.
 975,560. Conveyor belt. W. M. Metzler, Akron, Ohio.
 975,616. Ball bearing. H. Hess, Wawa, Pa.
 975,693. Metallic casing for pneumatic tires. B. J. Kingston and J. H. Lane, assignors of one-third to L. Northrup—all of Jackson, Mich.
 975,767. Demountable wheel rim. R. Healy, Brooklyn, New York.
 975,774. Tire inflating pump. C. Lewis, assignor of one-half to H. Wegman—both of Auburn, N. Y.
 975,816. Vehicle tire. [With floating ring within the shoe.] A. J. Wilson, Westfield, N. J.
 975,829. Tire of wheels of vehicles. J. Cairns, Willenhall, England.
 975,867. Process of manufacturing sublimed white lead. L. S. Hughes, assignor to Picher Lead Co.—all of Joplin, Mo.
 975,873. Hose connection for faucets. B. D. Knickerbocker, Chicago.
 975,901. Tire securing device. C. R. Spore, Jr., and J. B. Lang, Moberly, Mo.
 976,011. Tire protective armor. A. G. Thomson, assignor of one-half to A. Sutton—both of San Francisco.

ISSUED NOVEMBER 22, 1910.

- 976,172. Trolley wheel. [Having a rim and a resilient tire of non conducting materials carried thereby.] E. K. Harris, Canandaigua, N. Y.
 976,262. Tire repairing device. E. A. Holcomb, Hartford, Conn.
 976,359. Process of manufacturing artificial fruit and other plastic objects. F. Hamel, Paris, France.
 976,360. Vehicle wheel. [With tire plate seated on cushioning means.] B. W. Hammond, Richmond, Cal.
 976,552. Heel for boots and shoes. H. W. Cook, Syracuse, N. Y.
 976,591. Resilient wheel. H. E. Moebus, Boston, assignor to H. W. Brown, Brookline, Mass.
 976,656. Hose drier. [With a heater for heating air.] F. A. Hoyt, Gordon, Nebr.
 976,667. Spring tire. V. A. Marsh, Endicott, Wash.
 976,686. Spring wheel. H. P. Petersen, Sioux City, Iowa.
 976,710. Vehicle wheel. O. Treier, New York city.
 976,736. Tire support. A. C. Hayden, Brockton, Mass.
 976,762. Spring wheel. J. A. Wible, Oakdale, Pa.
 976,774. Hose carrier. A. P. Bolner, Hartford City, Ind., assignor of one-half to Samuel J. Peck.
 976,787. Water tight coupling. W. J. Donnelley, San Francisco.

ISSUED NOVEMBER 29, 1910.

- 976,840. Sectional pneumatic tube. F. R. Baylis, Lansing, Mich.
 976,846. Cushion tread vehicle wheel. H. C. Brown, assignor of two-thirds to H. Stockman—both of New York city.
 976,866. Automobile robe. J. P. Gordon, Columbus, Ohio.
 976,900. Detachable and sectional rim for vehicle wheels. J. W. Miller, South Sharon, Pa.
 976,938. Vehicle wheel. [With elastic tread.] S. L. Simpson, Washington, D. C., assignor to The Simpson Specialty Co., Cleveland, Ohio.
 976,969. Quick opening door for vulcanizers. J. K. Williams, Akron, Ohio, assignor of one-half to The Williams Foundry and Machine Co.
 976,971. Anti skidding tire. W. R. Yoder, Pittsburgh, Pa.
 976,989. Resilient wheel. L. F. Delaney, Watertown, N. Y.
 977,195. Vehicle wheel. [With resilient tire.] W. Q. Kennedy, Paterson, N. J.
 977,212. Tire clamp. [For pneumatic tires.] B. Morgan, Newport, R. I.
 977,238. Automatic trembler particularly applicable to warning apparatus [such as automobile horns]. E. Teste, Paris, France.
 977,351. Power tire pump. H. D. Waterhouse, Wollaston, Mass.
 977,357. Tire reinforcing fabric and method of making same. C. Zeglen, Chicago, assignor to C. A. Daniel, Philadelphia.
 977,368. Spring wheel. Z. A. Bruegger and R. D. Bruegger, Culbertson, Mont.

Design.

- 41,013. Alexander Henderson, assignor to Manhattan Rubber Mfg. Co., Passaic, N. J. The ornamental design for a mat.

Trade Mark.

- 51,886. Hood Rubber Co., Boston. The word *Bullseye*. For rubber footwear.

[NOTE.—Printed copies of specifications of United States patents may be obtained from THE INDIA RUBBER WORLD office at 10 cents each, postpaid.]

GREAT BRITAIN AND IRELAND.

PATENT SPECIFICATIONS PUBLISHED.

The number given is that assigned to the Patent at the filing of the application, which in the case of these listed below was in 1909.

*Denotes Patents for American Inventions.

- [ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, NOVEMBER 2, 1910.]
 15,876 (1909). Method of attaching pneumatic tires. J. C. Hudson, London.
 15,879 (1909). Device for cleaning golf balls. E. C. Marks, London.
 15,893 (1909). Adjustment for rubber cushioned skates. W. Wills, London.
 15,964 (1909). Pneumatic tire protector. C. Daniels, Isleworth, Middlesex, and C. Haley, London.
 15,965 (1909). Rubber tapping knives. P. J. Burgess, Pinner, Middlesex.
 *16,001 (1909). Squeezes. C. Brown, Chicago, Illinois.
 16,030 (1909). Golf balls. J. H. Roger, Glasgow.
 16,153 (1909). Golf balls. A. Macdonald, Troon, Ayrshire.
 16,182 (1909). Pneumatic vehicle spring. W. Keen, London.
 16,185 (1909). Non skidding device for tires. W. Ramsden, London.
 16,199 (1909). Rubber coated fabrics. G. Gawlich, Breslau, Germany.
 16,216 (1909). Pneumatic tire and method of securing same. T. J. McBride, Christchurch, New Zealand.
 16,230 (1909). Pneumatic cushioned wheel. T. James, Morriston, Glamorganshire.
 16,295 (1909). Pneumatic tire protector. G. G. Johnston, Sydney, Australia.

16,340 (1909). Pneumatic hub cushioned wheel. A. Cheradame, Paris, France.

[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, NOVEMBER 9, 1910.]

16,433 (1909). Attaching pneumatic tires. M. H. Smith, Westminster, and L. Sgal, London.

16,540 (1909). India-rubber compositions. E. Poizot, Calvados, France.

16,663 (1909). India-rubber compositions. E. Poizot, Calvados, France.

16,664 (1909). Pneumatic tire for vehicle wheels. W. W. Beaumont, Westminster.

16,672 (1909). India-rubber heel protector. J. Markus, Manchester.

16,743 (1909). Rubber heel protector. J. Helliwell, and W. A. Brigg, Keighley, Yorkshire.

16,763 (1909). Pneumatic tire made non-slipping and protected against puncture by insertion of rubber, which becomes hard on vulcanization. F. Rose, Liverpool.

16,777 (1909). Rubber packing ring for metallic closures. A. Mauser, Cologne, Germany.

16,918 (1909). Rubber bath brushes. W. R. Blowers, Toronto, Canada.

[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, NOVEMBER 16, 1910.]

17,072 (1909). Point protector for hat pins. A. Holcroft and G. A. Boycott, Wolverhampton.

17,249 (1909). Reinforcement for pneumatic tire shoe. T. Cann, Leicester.

17,285 (1909). Rubber protective part for vehicle tires. J. F. F. W. Ure, London.

17,329 (1909). Rubber mud guard for vehicle wheels. H. H. Wright, London.

17,338 (1909). Rubber sheath for bats and other striking appliances. S. Brown, London.

*17,446 (1909). Elastic vehicle tire. G. Gillette, New York city.

[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, NOVEMBER 23, 1910.]

17,653 (1909). Rubber tire consisting of flexible rubber tread supported by solid or pneumatic side cushions. W. B. Hartridge, Seaford, Sussex.

17,622 (1909). Elastic wheel with spoke ring supported by india-rubber loops. A. E. Hofmann, Lucerne, Switzerland.

*17,639 (1909). Pneumatic tire with compression cylinders for maintaining the air pressure. A. R. Bangs, New York city.

17,720 (1909). Protected pneumatic tire. E. B. Gaze, Waltham Cross, Hertfordshire.

17,766 (1909). Pneumatic tire strengthened to resist torsion by injection of viscous material. P. Wolfrom, Küps, Bavaria.

17,856 (1909). Elastic tire consisting of rubber blocks enclosed in a cover. R. Basch and S. Basch, London.

*17,924 (1909). Elastic tire with thin metallic casing supported by hollow rubber cylinders. W. R. Stewart, Saltsburg, Pennsylvania, and two others.

*17,930 (1909). Dress shields. T. McKenna, London. (I. B. Kleinert Rubber Co., New York.)

17,944 (1909). Typewriter erasers. H. A. Wanklyn, London.

*18,003 (1909). Rubber cushions for surgical boots and shoes. M. Byrne, San Francisco.

[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, NOVEMBER 30, 1910.]

18,231 (1909). India-rubber surgical trusses. M. Brook, Huddersfield, Yorkshire.

18,249 (1909). Pneumatic tire with exterior fastening flanges. W. Standing, Dublin.

*18,343 (1909). Solid or pneumatic tire connected to spokes by two-part sliding clamps. A. L. Carroll, St. Louis, Missouri.

18,369 (1909). Fabric for wheel tires. Salzmann & Co., Cassel-Bettenhausen, Germany.

18,385 (1909). Method of attaching pneumatic tires. C. Lees, Ashton-under-Lyne, Lancashire.

18,403 (1909). Elastic cord for punching ball. A. G. Pirkis, London.

*18,441 (1909). Puncture preventing shield for vehicle tires. G. W. Sharpe, Brooklyn, New York.

18,446 (1909). Vehicle tire of rubber blocks secured to metallic plates. G. D. Howard, Catford, Kent.

THE FRENCH REPUBLIC.

PATENTS ISSUED (with Dates of Application).

415,239 (April 26, 1910). Société des Automobile Françaises. Protective covering for pneumatic tires.

415,247 (April 27). The Akron Pneumatic Tire Making Machine Co. Machine for the manufacture of shoes for pneumatic tires.

415,213 (July 6, 1909). C. P. Barry. Process of recovering the natural caoutchouc contained in manufactured rubber.

415,334 (April 28, 1910). L. J. Huguerre. Process of manufacturing leather agglomerates.

415,481 (May 3). Brown Perfection Tube Co. Improvements applied to air chambers for pneumatic tires.

415,464 (July 12, 1909). M. Bouchet. Portable vulcanizer.

415,494 (May 3, 1910). P. Torchio. Process and apparatus for the manufacture of insulating coverings for electric conductors.

415,542 (May 2). F. Zu Aichburg. Process of manufacturing a substance resembling caoutchouc.

415,659 (May 6). C. J. Walker. Pneumatic tire for road vehicles.

415,954 (May 13). G. A. Pascal. Removable elastic tire for wheels of automobiles and other vehicles.

415,975 (May 14). The Detachable Rim Co., Ltd. Tire for vehicle wheels.

415,996 (May 14). J. Gebauer. Process for the manufacture of vitreous and mouldable substances by means of celluloid and caoutchouc solutions.

416,025 (July 27, 1909). De Brach Blustein. Air chamber protection for pneumatic tires.

416,082 (May 19, 1910). Martean d'Autry. Shoe for pneumatic tires.

416,099 (July 29, 1909). O. Grenier. Construction of non pneumatic elastic tire for vehicle wheels.

416,120 (May 19, 1910). The Rubber Patents, Ltd. Improvements in the manufacture of lawn tennis and other similar balls.

416,229 (May 2). I. B. Kempshall. Improvements in elastic tires for automobiles.

416,301 (May 24). E. H. Neefe. Method of treating crude caoutchouc.

416,353 (May 24). R. Lacaille. Protector for pneumatic tires.

416,435 (May 26). Leneven. Elastic tire for wheels.

416,486 (May 28). C. Hahn. Hollow elastic tire for road vehicles generally.

416,599 (May 31). J. P. Magney. Elastic tire.

416,570 (May 19). Dr. Cassirer & Co. Process and machine for the manufacture of caoutchouc dress shields.

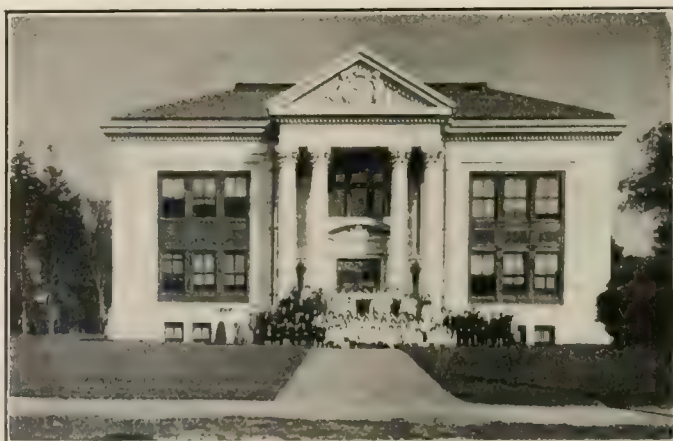
[NOTE.—Printed copies of specifications of French patents can be obtained from R. Robert, Ingenieur-Conseil, 16 avenue de Villier, Paris, at 50 cents each, postpaid.]

RUBBER AND THE CHINESE BANKS.

REFERRING to a recent crisis in Shanghai, which has been widely reported as an aftermath of the rubber boom, the Shanghai journal *Capital and Commerce* points out that the cause of the crisis and the dislocation of the market generally has to be looked into far beyond the rubber speculation of the first few months of the year.

Without going into details, it is to be taken into account that the banking system of China is totally unlike that of European countries or the United States. The number of banks is very great, and the capital usually small. They are started as a rule for the employment in trade of the accumulated money of the depositors. The bankers find it convenient to guarantee and give native orders for goods, generally to brokers, and have an interest in several businesses that come under their purview. Everything goes smooth in ordinary times, and only in times of crises one sees the essentially unbusinesslike methods they are following.

When the rubber boom developed the banks advanced money freely on plantation shares, in some cases much over the market value. Unlike merchandise, which in cases of necessity the banks can sell at a loss, they could realize nothing on some of the rubber shares when the decline came in this class of securities. The government was reported recently to be arranging for loans to relieve the tension caused by the embarrassment of the banks.



COLT MEMORIAL SCHOOL (BRISTOL, RHODE ISLAND).

[Erected in memory of the late Mrs. Theodora De Wolf Colt, by her son, Colonel Samuel Pomeroy Colt.]

THE RUBBER TRADE AT AKRON.

BY A RESIDENT CORRESPONDENT.

THE B. F. Goodrich Co. have just issued \$2,000,000 of their new 7 per cent. cumulative preferred stock, under the arrangement mentioned in THE INDIA RUBBER WORLD, August 1, 1910 (page 401). The rights of shareholders to subscribe at par for the amount of stock mentioned expired on December 8, by which time the issue had been oversubscribed by \$1,600,000. The new preferred sold immediately after issue at 112

GOODYEAR TIRE AND RUBBER ANNUAL.

THE annual meeting of The Goodyear Tire and Rubber Co. was held in their Akron office on December 5. The following officers were reelected:

President—H. G. M. MARRAS, F. A. SEIBERLING.
Vice-President—CHARLES W. SEIBERLING.
Secretary—G. M. STADLMAN.
Treasurer—FRANK H. ADAMS.
Assistant Treasurer—W. E. PEYER.
Superintendent—P. W. LITCHFIELD.

The board of directors chosen at the shareholders' meeting is the same as last year and is composed of F. A. Seiberling, Charles W. Seiberling, G. M. Stadelman, P. W. Litchfield, Frank H. Adams, James P. Loomis and Henry B. Manton.

THE First National Bank and the Second National Bank of this city, in both of which the rubber men of Akron are heavily interested, will consolidate under the name of the First-Second National Bank of Akron, with a capital of \$650,000, a surplus of \$650,000 and deposits of over \$5,000,000. Mr. Ohio C. Barber, a director of The Diamond Rubber Co., will be its president.

Mr. Charles B. Raymond, secretary of The B. F. Goodrich Co., after a successful year's work, has resigned as president of the Akron Chamber of Commerce, and Mr. F. A. Seiberling, president of the Goodyear Tire and Rubber Co., has been elected as his successor.

Mr. F. A. Seiberling has bought a beautiful tract of land on Portage Path, a suburban boulevard, bordered by homes of rubber manufacturers, upon which he expects to build a home.

Mr. Arthur Leavitt, connected with The B. F. Goodrich Co., and son of Percy Leavitt, of that company, was married to Miss Helen Steiner on November 22.

THE RUBBER TRADE IN SAN FRANCISCO.

BY A RESIDENT CORRESPONDENT.

THE rubber goods trade in this city was uneventful during the latter part of the year, as it was the season approaching the holidays, when there is a natural inclination to postpone business activity. But more than this, the extreme scarcity of rain had rendered the waterproof branch very quiet, leading to an unusual accumulation of goods of this class. In the mechanical line, the principal contractors were putting off the question of orders as long as possible, in the hope of a further fall in the price of crude rubber. None of these things has tended to increase business activity and the best that can be said is that all of the establishments are plodding along, holding their own about equally well. Collections, however, are not so quiet that the merchants can complain.

* * *

MR. MILLER, of The B. F. Goodrich Co., is now in San Francisco, and the company has its temporary offices in the Pacific building, until such time as they can occupy the big Market street store, which is being put into shape as rapidly as possible.

* * *

THE Gutta Percha and Rubber Manufacturing Co. are planning to move some time in January, having secured a lease on premises on Fremont street, between Market and Mission. This is close to the location occupied by this firm before the fire of

1906, and they feel like getting home again, although their present quarters at No. 69 First street are not far from the old location. The new place will be more conveniently arranged than their present store, and will give them more floor space also.

* * *

THE question as to what lines of goods the Gorham Rubber Co. will take up, to replace those handled by them hitherto, is one of the most interesting points in the local rubber trade just now. But as Mr. Gorham is at present in New York, along with two other members of the company, it is likely that the uncertainty will soon be over.

* * *

THERE is a rumor that several firms in the tire trade are going to combine their Pacific coast forces with a purpose of operating them under one roof. A similar combination of tire selling forces was attempted in this city a few years ago, but apparently was never successful.

* * *

THE San Francisco branch of The Firestone Tire and Rubber Co. has been moved into the handsome new building erected exclusively for them, at the corner of Van Ness avenue and Fulton street. It is a three-story structure, and is the largest and probably the best equipped tire branch on the Pacific coast.

* * *

THE Consolidated Rubber Tire Co. plan to move into a new, prominently situated, and modernly equipped building during the latter part of January. The company have leased a one-story and basement building now under construction on the south side of Golden Gate avenue, below Polk street. This is in the heart of the automobile district, where everybody goes for supplies and repairs.

* * *

MR. J. H. KELLY, of the Republic Rubber Co., is again in San Francisco, after having been away for a few weeks visiting outside agencies. He will remain for a few weeks longer visiting the firm's agencies on the coast.

* * *

MR. VAL. BERRY, who formerly sold druggists' sundries for the Gorham Rubber Co., and who has been on a visit to the East, has returned with the account of the Faultless Rubber Co. (Ashland, Ohio), which he will take care of on the Pacific coast in future.

* * *

THE Woven Steel Hose and Rubber Co., who are now introducing their line on the coast, report excellent progress in this—for them—new and rapidly growing territory. Stott, Plover & Co. are their present Pacific coast sales agents, having succeeded Frederick V. Stott & Co., and they occupy elegant and centrally located offices in the Balboa building, on Market street.

* * *

MR. H. C. NORTON, manager of the American Rubber Manufacturing Co., states that at their factory, in Emeryville, they have as many orders as could be expected at this time of the year, and they are satisfied that business in the future will be excellent.

* * *

THE Plant Rubber and Supply Co. have bought all of the packing and belting of the Barton Packing and Rubber Co., which firm is now confining itself to the manufacturing end of the business. Mr. S. L. Plant reports that business this year has shown up better than did that of last.

* * *

THE Bowers Rubber Works report that they have sold more garden hose during the year just past than any other year. They now have enough work for this department to carry the factory for five months, and so they are taking no more orders for early delivery.

* * *

W. J. CRANDLEY, of the Crandley Rubber and Supply Co., of

No. 41 California street, states that business has been pretty good with him, considering his is a new firm in the business, and he expects to see continued growth and development.

* * *

THE Pacific Mill Mine and Supply Co., on Mission street, near First, have issued their first catalogue. This firm has given a great deal of attention to the setting out of every article connected in any way with belting, whether generally carried as a part of the belting line or not. Their catalogue has been made valuable on account of the many reference tables for practical mechanical use where belting and its installation is necessary.

* * *

W. A. DAGGETT coast representative for the Eureka Fire Hose Manufacturing Co., was lately visiting the factory in the East, returning just before the first of the year.

NEW TRADE PUBLICATIONS.

THE catalogues of the various footwear companies embraced in the UNITED STATES RUBBER Co., for the season of 1911, reached the trade earlier than usual this year, having been sent out during the past month. This series of illustrated catalogues has appeared annually for so long that the majority of the trade have been familiar with them throughout their business careers. While footwear styles have changed, and there may have been from time to time a difference in the arrangement of the catalogues, and new reading matter was introduced from year to year, there was one feature which seemed destined to be perpetual—a size of page $3\frac{1}{4} \times 6$ inches, with usually 62 pages.

There was an occasional departure from this, however, in the case of some of the companies, and this year a larger size has been adopted for the catalogues of all companies to which this notice relates. The new catalogues are $4\frac{1}{4} \times 8\frac{1}{2}$ inches, while the number of pages has been decreased, though without eliminating any of the usual contents of these publications. The changed size of page permits of the use of larger illustrations than formerly and this fact in turn gives an opportunity for depicting better than in the past the appearance of the goods described. The boots and shoes which are shown in these half tones look more "lifelike" than anything seen in the pictures of rubber shoe catalogues in the past, particularly in the case of goods having soles or heels of special designs or rubbers having cloth tops. For this reason alone the change in style of these catalogues cannot fail to meet with favor.

Without going into detail, the number of styles of toes illustrated appears larger than in previous years. Rubber footwear made in this country long has had the distinction of being "close fitting," and it is evident that this quality is being emphasized even more in the attempts of the rubber factories to turn out goods that will fit every possible shape in leather footwear. As has been the case with these catalogues recently, prices are omitted, as the frequent changes in the crude rubber market have made less practicable than formerly the guaranteeing of footwear prices for a year at a time.

The 1911 catalogues sent out from the general offices of the United States Rubber Co. are those of the following companies:

American Rubber Co.
The Joseph Banigan Rubber Co.
Boston Rubber Shoe Co.
L. Candee & Co.
Goodyear's India Rubber Glove Manufacturing Co.
The Lycoming Rubber Co.
Malden Rubber Shoe Co.
Meyer Rubber Co. (including "Meyer" brand and "Jersey" brands.)
Wales-Goodyear Shoe Co. (Made by the Goodyear's Metallic Rubber Shoe Co.)
Woonsocket Rubber Co.

The whole series is exceedingly creditable to the advertising department which Mr. John P. Lyons has managed for so many years for the United States company.

AMERICAN STEEL AND WIRE Co. issue a "Catalogue and Handbook of Electrical Wires and Cables" which is unique in the matter of trade publications. It differs about as far as possible from the ordinary form of catalogue of manufacturing products. As a handbook, it is a very complete account of the construction of electrical conductors and their properties, with the dimensions requisite for any required results. The installation of electrical wires and cables is also dealt with fully. Much of the information may be found in books of reference, but some of it is published here for the first time. The data have been carefully compiled and arranged, with a view of rendering the customer all possible assistance in selecting and specifying the material best suited to his requirements. The illustrations in this volume form a notable feature, most of them being of a nature not contained usually in electrical works. Beginning with illustrations of specimens of crude rubber, for instance, all the processes of insulating are shown very clearly, together with specimens of the products and the means employed for transporting and installing the latter. The illustrations relate to other means of insulation than with rubber, and there are views of braiding and wire covering machines, and the like. The details of dimensions are very complete. Nearly 50 pages are devoted to a glossary of electrical words, terms, and phrases, the same being offered as an abridgement of Houston's "Dictionary." The only features in this handsome volume of 234 octavo pages suggestive of the ordinary manufacturers' catalogue are (1) a page list of the products of the American Steel and Wire Co., and (2) a list of their sales offices. The New York address given is No. 30 Church street.

THE MAUMEE RUBBER Co. (Toledo, Ohio), issue Catalogue A of Mechanical Rubber Goods, calling attention to the products of several leading manufacturers whose agencies they hold. [$4\frac{1}{2} \times 6\frac{3}{4}$ ". 100 pages.]

THE WILLIAMS FOUNDRY AND MACHINE Co., (Akron, Ohio) issue a catalogue of Automobile Tire Repair Equipment for 1911. They are producers of a number of devices in this line, for which a large demand has grown up. [6×9 ". 16 pages.]

W. D. ALLEN MANUFACTURING Co. (Chicago) devote their Circular No. 168 to Lawn Sprinklers for the season of 1911, which shows that they are beginning in good time for next year's trade. It is interesting to notice that they list a number of novelties. [$3\frac{1}{2} \times 6$ ". 32 pages.]

THE SPRINGFIELD RUBBER Co. (Springfield, Massachusetts) issue a catalogue of Latest Styles in Waterproof Clothing, in which a number of attractive models for men and women are illustrated. [$5\frac{1}{2} \times 9\frac{1}{4}$ ". 32 pages.] Also: A descriptive catalogue of Garden Hose and Sundries. [$3\frac{1}{2} \times 6$ ". 8 pages.]

MME. J. LEFRANT & Co. (Ham [Somme], France) issue a booklet on French India-Rubber Substitutes, giving details of interest to the trade in relation to the various substitutes for hot and cold cure, which they manufacture. The trade generally will do well to look it over. [6×9 ". 8 pages.]

ALSO RECEIVED.

THE Republic Rubber Co., Youngstown, Ohio.—The Tire Perfect. A short talk on Tires. [Relates to the Republic Stagard Tread Tire.] 22 pages.

Viking Rem—& Paknings—Fabrik, Christiania, Norway.—Special List of Balata and Leather Belting. 4 pages.

Knox Manufacturing Co., No. 704 Arch street, Philadelphia.—Knox Specialties. Couplings, Clamps, etc. 16 pages.

Parker Manufacturing Co., Boston.—The Standard Recording Thermometer. 12 pages.

J. W. Paxson Co., Philadelphia.—Patent Magnetic Metal Separator. 6 pages.

The Peerless Rubber Manufacturing Co., New York.—Belts that Move the Mechanical World. 16 pages.

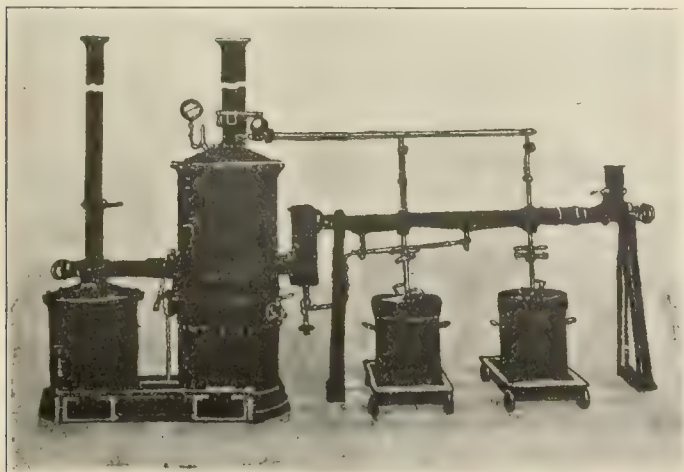
The Firestone Tire and Rubber Co., Akron, Ohio.—Instructions for Operating "Firestone" Quick Detachable Rims and Quick Detachable Demountable Rims. 12 pages.

At the fifteenth annual meeting of the Self Sealing Rubber Co., Limited (Birmingham: October 21), the continued prosperity of the company was referred to, and the usual dividend of 10 per cent., free of income tax, was declared.

THE DA COSTA COAGULATING SYSTEM.

A MACHINE which is attracting widespread interest among rubber planters in the Far East is that invented for the coagulation of rubber latex by Mr. José Sinão Da Costa, of Pará. Its design is to make practicable by simple mechanical means the native process of smoking the latex of *Hevea Brasiliensis* practised by the natives in the Amazon region. It is well known that the latex from the Pará trees will coagulate by the action of heat. It is known that fairly large samples of rubber were produced in Brazil coagulated by other means than smoking long before the Eastern rubber industry was founded. Nevertheless it is still regarded in Brazil that by smoking alone can be obtained those lasting properties of resiliency and tensile strength, which are the denominating characteristics that have gained for the product of *Hevea Brasiliensis* its supremacy among rubbers.

Mr. Da Costa, who has spent practically a life time in the Amazonian rubber interest is among those who believe in the virtues of smoking rubber, and he has patented this process with a view to making it more economical than the native smoking method, and particularly for the plantations of Ceylon and Malaya. As is well known, the best prices for plantation products are now obtained for "smoked sheet."



DA COSTA'S PATENT LATEX COAGULATOR.

The operation of this process is simple. The latex, when brought from the trees, is first strained, if it contains mechanical impurities, and is then poured into the coagulating tank on the top, steam having in the meantime been raised in the boiler below from a fire of forest woods alone. On this wood fire are then thrown green palm leaves, nuts, or any green twigs, the distillation of which produces acetic acid, whilst the fumes of the green foliage contain creosote to some extent. The fumes are collected in a special chamber, and, after being cleared of dust, etc., are forced into the coagulating tank by a steam injector. During the agitation thus caused the smoke thoroughly permeates the latex, and in about ten minutes, or rather more, according to the quantities to be dealt with—the caoutchouc globules coagulate and separate, and at the same time rise to the surface. After being allowed to cool off in the tank, the coagulated rubber is taken to a small press and turned out in the shape of flat block rubber, which is afterwards reblocked into cube form, and, after being dried, is ready for shipment.

The Da Costa system is manufactured by David Bridge & Co., engineers, of Castleton, Manchester, England. It was exhibited by them at the late Exposition Universelle at Brussels, where a practical illustration of it was given. Latex was coagulated there by the Da Costa system and then put through the other various machines manufactured by the Messrs. Bridge, with

the result of obtaining rubber in crepe, sheet, and block forms. It may be mentioned, by the way, that Messrs. Bridge were awarded the *Diplome de Grand Prix* at the Brussels Exposition, for rubber preparation machinery. They have prepared a handsome souvenir book illustrating and describing the various forms of apparatus which were embraced in their Brussels exhibit.

BRITISH GOLF BALL PRICES.

IN answer to a complaint on the part of many golfers in England at the price of golf balls—stated generally at 2s. 6d. [= about 60 cents]—a writer in London *Field* says that the advance in prices some time ago was not made until fine Pará rubber had reached 11s. [= \$2.67½], although the makers had been working at a loss for some time. The writer continues:

"In common with others, we expected the price to fall before it did, and so the old state of things might have been maintained. We cannot buy our rubber thread in the market one day and make it into cores the next. We have to provide for the future and safeguard ourselves against contingencies, and therefore, like others, we have to make long contracts ahead. The contracts which we made with rubber fairly high are still running, and will do so for a few more months, and until they expire the cost of manufacture is as great as ever. In the existing circumstances it is impossible for us to reduce the price and make a fair profit for ourselves; in fact, a reduction to the 2s. level at this moment would mean loss to us.

"Unthinking people say that rubber is 6s. [= \$1.46] a pound, and then they weigh a golf ball and calculate accordingly how many may be made from a pound of rubber. But the cores of these balls are made from fine rubber thread, and the price of this at present is not 6s., but 10s. 9d. [= \$2.61½] a pound, and one pound will only make thirteen balls. [This figures at a little over 20 cents per ball for rubber alone.—I R W] It must be remembered also that, owing to the severe competition and the greater care that is now exercised in the process of manufacture, the cost of making is more than it was. There are innumerable small expenses, which together are considerable, of which the public knows nothing, or, knowing, takes no account."

"The manufactory expenses," continues *The Field's* correspondent, "should surely be taken into the reckoning, but the thoughtless public that talks about the possibility of making first-class balls for a shilling or 18 pence considers only the cost of raw material, and not all of that. The effort among leading manufacturers to produce better and better balls is such that experimentation has to go on constantly, and sometimes it is expensive. Then as a specimen of working expenses that are never considered outside, there is the fact that a mold, that will only contain one ball at a time, and which does not last for more than a year, costs us 50 shillings. A very serious item also is that, owing no doubt to the difficult situation in which the smaller professionals find themselves, the proportion of bad debts we make, and cannot help making, is very high—generally, as we reckon, about 20 per cent.

"The result of it all is that we cannot afford to make the balls as we make them in these days, putting new and full-sized cores into them and new material in every other respect, and sell them wholesale, so as to give a small profit to ourselves, for less than 24s. a dozen, leaving 6d. per ball profit for the professional who sells them. In existing circumstances it is utterly impossible to do better than this, and we should have to stop the manufacture rather than sell at a loss."

It is interesting to note that in the report of the principal chemist of the British government laboratory for the past year that office was called upon to test 28 specimens of waterproofs for the postoffice, in connection with the postal and telegraph messengers, and materials for their manufacture, of which 23 were oilskins and 5 rubber-proofed goods.

Jelutong Works at Goebilt.

By JOHN SHAWMUT, Ph.D., U.S.A.

THE symptoms of the United Malayan Rubber Co. as revealed at the India Rubber Works are doubtless rather good, from the new town of Goebilt in Sarawak (Borneo). Having recently had a visit of inspection of the works of the company, returning just on a month to Borneo, it seems to me that some most interesting things will be seen and the impressions obtained will not be without interest to the readers of this journal, especially as the material which the Malayan Company was found to deal with is so large a demand in America.

Sarawak, covering roughly 80,000 square miles, lies between 3° and 4° North, Borneo and 100° and 110° North Longitude, and is closely known in Europe from the fact that it is an almost continuous strip protected by an iron curtain with tall, straight, treeless, some the title of *Kauke*. There is, however, a good deal more to be said about Sarawak. Much of it has been well cultivated and excellent work entitled "Sarawak under the White Rajah" has appeared not very long ago. Those who wish to receive something regarding the political, social and commercial progress made under the royal government of this state, possessors will do well to consult the pages of this work.

Greater the greater portion of Sarawak is within 1 to 2 degrees of the equator, its climate is remarkably uniform and healthful. It grows, however, the climate is similar to that of Malaya. In the fact, the temperature in the coast districts seldom rises above 85 or 86 degrees, at least 75 or 78 degrees appears to be the average. The rainfall in the neighborhood of Kuching (the capital) and surrounding districts is about 160 inches, and there are the usual heavy night dews. In view of the climatic conditions and the fact that so much of Sarawak is covered with swampy jungle, it is remarkable that malaria is practically unknown. The reason appears to be that the mosquito, *Anopheles*, is not so abundant, although other varieties of this dangerous insect abound.

The growth of vegetation in Sarawak exceeds anything that I saw in any of the eastern provinces, even in the most favored parts of Malaya. The exports are mainly consisting of pepper, vine rubber, rattan, pines, and last, but not least, jelutong. In view of the new industry which is rising in connection with the production of jelutong in large quantities and the fact that the growing conditions here are the best of places, in 1904 about 2000 tons of jelutong were exported from Sarawak, and the figures since then (not very exactly) have grown to 1000 tons, November, 1908, to March, 1910, being roughly at the rate of 12,000 tons a year.

Jelutong is derived from a number of species of trees, the most common being *Alseis blackiana*. This grows very large, some the diameter of a mature tree often reaching 4 to 6 feet. Jelutong varieties are found in the commonest parts of trees of Sarawak, South Borneo, Central Borneo, the Malay Peninsula, and Sumatra. The quantity of jelutong in these vast forest regions is very great. During the past few years I estimate that the total production per annum has been 25,000 to 30,000 tons of jelutong. During the past year the output must have been not far short of 30,000 tons. Large areas, however, for instance, the Federated Malay States, and parts of Borneo and Sumatra, have not yet been worked, and I have little doubt that the trees readily accessible in the working regions would easily yield double the quantity referred to.

Different qualities of jelutong are known in the trade, according to the districts from which they are derived, as *Pandurang* (Sarawak), *Pudungak* (South Borneo), *Sarawak*, and so on. Commercial jelutong is obtained by coagulating the latex derived from the feeding tree. The latex is generally tapped by the natives in one of two ways which greatly resemble, respectively, the full section V systems employed in cultivation of *Hevea* rubber. Occasionally the native methods result in the destruction of trees, but on the whole I am inclined to think that no considerable destruction has taken place. Both the Dyak and the Malay growers have sufficient intelligence to understand that destruction of trees entails the going matter and to earn their livelihood. However, measures for the protection of trees and with a view to introducing a more scientific system of tapping are being adopted. In Sarawak the government have appointed special inspectors, and none but licensed tappers are permitted to work the trees. In the Federated Malay States, South Borneo, and the Sumatra possessions owned by the United Malayan Rubber Co. similar steps are being taken.

The system of tapping now being introduced consists of a long V with a channel running from the point of the V to the collecting can. The V cuts may be from 6 to 8 feet long and are made by means of a special knife attached to a rod. This system works very satisfactorily, and the Malay and Dyak collectors require little training.

The yield from a mature tapping tree is very large. According to figures obtained by the department of forests of the Federated Malay States a number of trees were tapped in December, 1910. For one tree tapping 48 trees yielded 50 cwt. (1.78 tons) of latex. In the second tapping 37 trees



INDIAN VINE RUBBER WORKS
(Sarawak, Borneo)



STEAMER LANDING AT GOEBILT
(Arrival of RUBBER EXPORTS from Sarawak)



THE MAIN STREET OF GOEBILT.

(The town built by the United Malaysian Rubber Co. in the Malay States, Borneo, in connection with the rubber plantations.)

yielded 66 catties [=88 pounds]. The reason for the increased yield at the second tapping is that the flow is somewhat sluggish at first, but subsequent tappings give an increased and ready yield. The Malay States trees yield less latex than the Borneo trees, although the latex is richer in rubber. I think the Borneo trees might with safety be tapped once a week, but if only 40 tappings annually are made this means a yield of about 80 catties [=108 pounds] of latex per tree per annum. The latex should yield on an average about 60 to 70 per cent. of solid (wet) jelutong, containing about 10 per cent. of rubber. This corresponds to a yield of 6 to 7 pounds of pure rubber per tree.

For the coagulation of the latex of jelutong the natives employ a number of weird mixtures, generally including kerosene oil on the one hand, and a variety of "powders" on the other. The latter are sold to them by Chinese dealers, and some of the ingredients I have come across are of little value for the purpose intended. Among the constituents of these "powders" are copper sulphate, alum, gypsum, and the like. The native method consists in adding some of the kerosene and a little of the "powder" and stirring the whole, and then alternately a little more kero-

sene and powder are added until the whole of the latex sets to a more or less firm block.

It is surprising that this crude method produces material from which very fair rubber can be extracted. It is, however, equally certain that by improved methods of coagulation much better rubber can be obtained. Mr. Morton, the company's chemist, has recently made a thorough study of methods of coagulating jelutong latex, and has succeeded in devising a method which produces rubber which in appearance and general quality appears to be indistinguishable from the very highest class of plantation *Hevea*, to wit, a light amber, strong, clean sheet. The organization of introducing rational methods of coagulation is being rapidly perfected, and it is likely that within a short period the methods of jelutong production and handling will be completely revolutionized.

Commercial jelutong contains roughly 70 per cent. of water and 30 per cent. of solids, the latter consisting, broadly, of one-third rubber and two-thirds resin. A number of processes have been devised for extracting water and resin from commercial jelutong and deresinated rubbers of this type are now being produced on a considerable scale. The Goebilt works of the United Malaysian Rubber Co. were established with a view to working a novel process of this kind in connection with large concessions over jelutong bearing areas.

Goebilt lies close to the mouth of the Kuching river, which is navigable for a considerable distance. There is a weekly steamship service between Goebilt and Singapore. The Goebilt works are on a scale of unprecedented magnitude and have been planned with a view to the production of 10,000 pounds of finished rubber per day. Equally remarkable is the extraordinarily rapid development of the factory. Clearing of the site commenced in April, 1909, and in October of the same year trial runs of the plant had commenced. During the same period there had been erected in addition to the factory buildings proper, coolie lines, bungalows for Europeans, storehouses and so on. A bare year after clearing of the jungle had commenced there was a population of probably 500 to 600 souls; practically every necessity of life could be obtained, and there was, in short, an organization such as one expects to find in a well ordered civilized community.

Although for obvious reasons I cannot give a description of the general methods and processes employed at the works, a few details which will give some idea of the magnitude of the enterprise may be of interest. The landing arrangements consist of a large stone pier or seawall and of a wooden pier. The main works consist of a steel building 200 x 75 feet, equipped with electric and steam power. This building contains the rolls, extractors, pumps, stills, and other parts essential to the process. The boiler house, which is separate, contains three Heine boilers capable of developing 750 H.P. In addition there is an engine



NEW CONSTRUCTION AT GOEBILT.
[Plant of the United Malaysian Rubber Co.]



GROUP OF OFFICERS.
[Plant of the United Malaysian Rubber Co.]

There is also a necessary steam engines, pumps and dynamo, a machine shop and foundry, a carpenter shop, a splendid modern laboratory, an ice plant, offices, storehouses, and drying and packing sheds. Water is supplied by a pipe line some three miles in length. The European staff includes a civil engineer, mechanical engineers, a master fitter and a master plumber, two chemists, harbor master, office chief and others. Labor is readily obtainable, partly Malay, partly Chinese.

It is proposed to erect a second works on Kaman Island, some thirty miles from Singapore, at which it is proposed to produce 30,000 pounds of rubber per day, making with Goebilt a total of 40,000 pounds daily. The conditions of organization and work there will be similar to what exists in Sarawak.

SOME GOEBILT STATISTICS.

The preceding paper by Dr. Schidrowitz may be supplemented by some details supplied by this gentleman to the United Malaysian Rubber Co., Limited, for the information of their shareholders. As for cost of the crude jelutong, he seems to regard say 5 Straits dollars per pikul as the probable average, and this works out at slightly more than 2½ cents, gold, per pound. But even if the cost should reach 6 Straits dollars, and allowing 10 pounds of jelutong for the production of one pound of finished rubber, the cost of the latter would be slightly more than a shilling per pound. The factory product includes two pounds of resin for each pound of finished rubber, and in the opinion of Dr. Schidrowitz the resin should sell ultimately at about 2 pence per pound, or enough to pay for the cost of factory operation. These figures are given as to the shipments of rubber from the Goebilt works:

Previous to July, 1910.....	pounds	258,435
July		115,000
August		142,650
September		155,383

THE RUBBER TRADE AT TRENTON.

BY A RESIDENT CORRESPONDENT.

THE leading rubber factories of Trenton have enjoyed of late a period of marked activity, many of the mills being run overtime. The impression seems general that the outlook for the industry in the coming year is good.

J. Russell Kelso, of the Woven Steel Hose and Rubber Co., says that their business for 1910 exceeded that of the preceding year, and he feels encouraged over the prospect for 1911. The company report the opening of two additional branches—in San Francisco and at Phoenix, Arizona.

A. Boyd Cornell, of the Empire Rubber Manufacturing Co. and the Empire Tire Co., reports an increased business for the year just ended in both mechanical goods and tires. The two three-story additions to their buildings recently completed and equipped have largely increased the manufacturing capacity of Empire companies.

C. E. Lambert, of the Acme Rubber Manufacturing Co., reports working 24 hours daily in their mill room for the past month.

John S. Broughton, of the United and Globe Rubber Manufacturing Companies, says that the demand for railroad goods is exceedingly good.

C. H. Oakley, of The Essex Rubber Co., Inc., tells your correspondent that they have been working three nights a week for some time. Their "Essex" rug is meeting with an encouraging demand in various parts of the country, good orders having been received from Washington for use in the United States capitol and in several of the departments.

The Ajax-Grieb Rubber Co. have been obliged to run continuously day and night, notwithstanding the important additions made recently to their plant. These include two three-story buildings, 200 x 60 feet, and 100 x 6 feet, and a one-story building

200 x 60 feet. There are also additional carpenter and blacksmith shops, and they are now putting in a laboratory. The drug-gists' sundries line taken on recently has exceeded their expectations in volume of business.

Seymour Obermer, British representative of the Thermoid Rubber Co., is over from London and will not return until after the automobile shows in New York, at which the Thermoid people are exhibiting a full line of their automobile rubber goods.

George R. Cook, who is at the head of the Acme and Hamilton rubber manufacturing companies, of this city, is largely interested likewise in other important Trenton industries, notably the potteries and linoleum. He is president of the Trenton Oil Cloth and Linoleum Co. and the Standard Inlaid Manufacturing Company. On December 21 Cook's Linoleum Co. was incorporated under the laws of New Jersey, with \$2,000,000 capital. While Mr. Cook's name does not appear officially in connection with the new company, it is assumed that it will control the business of the two companies named, and also that of the new linoleum plant in Chicago in which he is interested.

Fred R. Sayen, secretary of the Mercer Rubber Co., returned lately from a vacation, part of which was spent in Panama along the line of the canal. This company has already a considerable Pacific Coast trade, which doubtless will be extended with the opening of the canal.

A piece of 27-inch suction hose made by The Combination Rubber Manufacturing Co., at Bloomfield, while in use was flattened by the accidental falling of a heavy crane. By the use of a jack the hose, with the heavy spiral band iron lining, was restored to shape and to working efficiency.

Announcement is made of the engagement of Miss Haas, of Philadelphia, to Mr. William Nelson Blodgett, a son of William L. Blodgett, of the Hamilton Rubber Manufacturing Co., of which Mr. Blodgett, junior, is chemist, having been graduated from Princeton University with the degree of B. S.

The engagement is also announced of Miss Hamill, of Trenton, to Mr. Bruce Bedford, of the Luzerne Rubber Co.

INDIA-RUBBER GOODS IN COMMERCE.

EXPORTS FROM THE UNITED STATES.

OFFICIAL statement of the values of exports of manufactures of india-rubber and gutta-percha for the month of October, 1910, and for the first ten months of five calendar years:

MONTHS.	Belting, Packing, and Hose.	Boots and Shoes.	All Other Rubber.	TOTAL.
October, 1910.....	\$166,996	\$242,746	\$428,431	\$838,173
January-September	1,592,594	1,664,215	4,258,968	7,515,777
Total, 1910.....	\$1,759,590	\$1,906,961	\$4,687,399	\$8,353,950
Total, 1909.....	1,469,272	1,288,705	3,478,438	6,236,415
Total, 1908.....	1,049,641	1,157,136	2,940,309	5,147,086
Total, 1907.....	1,168,648	1,401,890	3,345,209	5,915,747
Total, 1906.....	994,883	1,077,009	2,702,861	4,774,753

The above heading, "All Other Rubber," for the last four months includes the following details relating to Tires:

MONTHS.	For Automobiles.	All Other.	TOTAL.
July	values \$146,080	\$56,096	\$202,176
August	151,468	71,486	222,954
September	133,735	39,457	173,192
October	103,788	33,469	137,257

At the recent International Shoe and Leather Fair in London important exhibits were made of the products of the United States Rubber Co. and the Hood Rubber Co., by the foreign branches maintained by these corporations. Another interesting exhibit was that of the United States Shoe and Leather Co., of London, dealers in products of the United States Rubber Co. Other American products were the shoe heels marketed by Howison & Co., Limited, of London.

BALATA BELTINGS IN AMERICA.

AT the annual meeting of R. & J. Dick, Limited, [Glasgow, November 9], the chairman stated that the main feature of the year's report related to the construction of a balata belting factory in America, at Passaic, New Jersey, at a cost of about £30,000. In the meantime they had been at work in opening a market for their belts in America. They had involved much preliminary expense in the establishment of a selling organization, the whole of which had gone against the profit of last year. A large amount of belting manufactured at home had been sold in the United States. That had not been lucrative business, because of the heavy tariff of 35 per cent. which was borne on the finished articles. They had had to sell at a bare profit, when the strong demand from all parts of the world would have enabled them to sell at a more satisfactory rate. That, however, was a temporary matter, and they believed the exertions of the past year had laid a safe foundation for prosperous business in the future.

Discussing the accounts, the chairman said that the gross profits stood £11,000 lower than last year, chiefly for reasons connected with America which he had explained. The result was that they had this year £41,000 to distribute as against £53,000 last year. The dividends for the year aggregated 5½ per cent. on the preference and 3 per cent. on the ordinary shares, after transferring £10,000 to a special reserve fund, to be invested in outside securities to secure the payment of preference dividends. The gross profit on the year's trading was £47,226; deducting income tax and depreciation, the net profit was £39,751.

THE DICK FACTORY IN AMERICA.

THE American management of R. & J. Dick, Limited, advised THE INDIA RUBBER WORLD during the month of the completion of their factory at Passaic, New Jersey, adding that they were then busy with the erection of their special machinery, imported from Great Britain. They expected within a very few weeks to be manufacturing their well known "Dickbelt." The company further advise: "Our factory is capable of turning out as much stuff as our main works in Glasgow, Scotland, which supply the whole of the world except the United States of America. Our Passaic factory has been specially built for the requirements of the users of belting in the United States, and we are pleased to let you know that we have already established a large business, and as soon as we start manufacturing we shall have in hand sufficient orders to keep us going for some considerable time." The company maintain a New York office at No. 50 Church street.

* * *

THE United States consul at Manchester, England, reports shipments of balata and other belting from that port to the United States during October last to the value of £3,208, as compared with £2,281 in October, 1909.

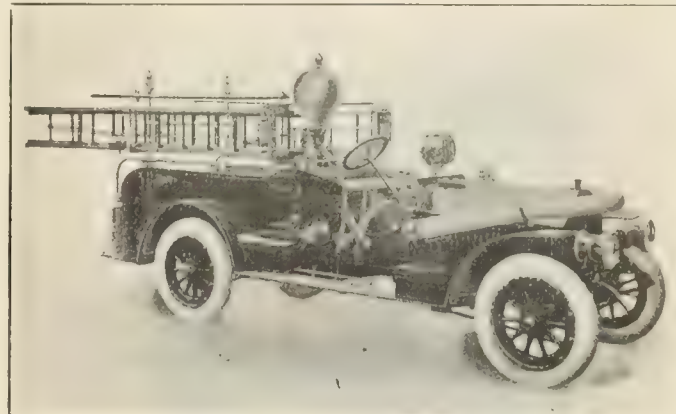
The India-Rubber, Gutta-Percha, and Telegraph Works Co., Limited, have become extensive manufacturers of balata belting.

THE Société Française pour l'Achat et la Vente des Produits de la Russian-American India Rubber Co.—a branch of the St. Petersburg establishment, has been established in Paris, with a capital stock of 500,000 francs, in shares of 500 francs. Offices: Rue St. Ferdinand, 47.

AUTOMOBILE FIRE ENGINES.

SELF propelled fire fighting apparatus is coming so extensively into use, not only in large cities, but in smaller places, for which it furnishes ideal fire protection, that the item of rubber tires, with which these vehicles must be equipped, will entail a very material addition to the large amount of india-rubber fire departments already require in the shape of hose.

The motor fire engine here illustrated, which has a guaranteed speed of 60 miles an hour, with a carrying capacity of 3,600 pounds, is propelled and operated by a 90 H. P. gasoline motor, and is only one of a number of similar machines built by the Webb Motor Fire Apparatus Co. (St. Louis), including fire engines, chemical engines, hose wagons, and trucks for fire de-

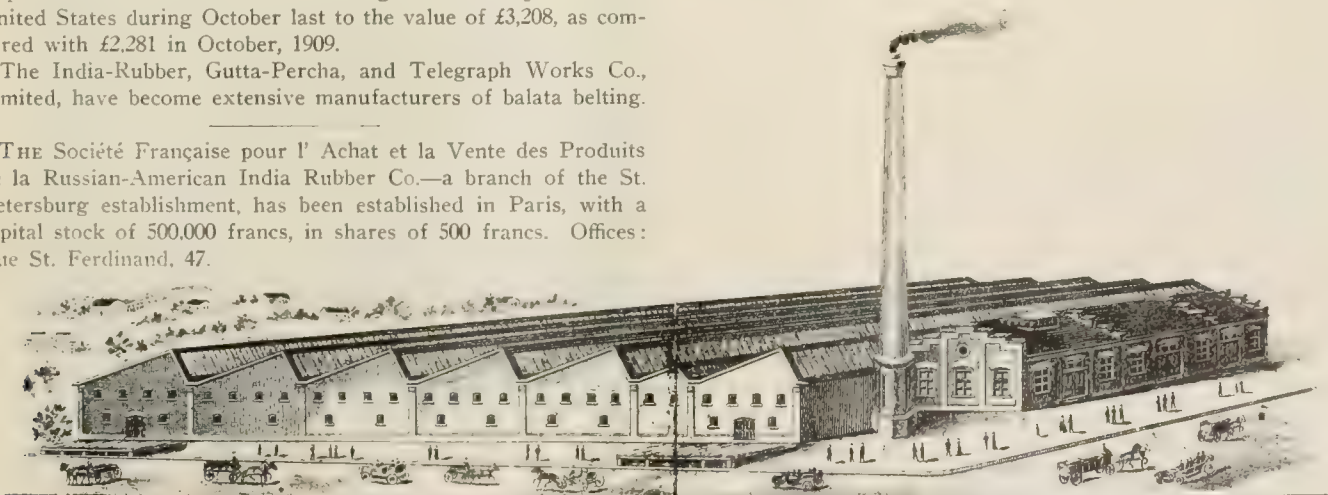


WEBB No. 1 MOTOR FIRE ENGINE.

partment use, for which rubber tires are indispensable. The high rate of speed at which these ponderous vehicles are required to travel over all kinds of roads makes the pneumatic tire absolutely essential for the protection of the motor and pumping mechanism from the destructive shocks to which it would otherwise be exposed.

New York City has some of this self propelled fire apparatus in use; other cities in which it is employed, with satisfactory results, are St. Louis, Charleston South Carolina; New Haven, Connecticut; Augusta, Georgia; Birmingham, Alabama; Winnipeg, Manitoba; Springfield, Ohio; Detroit, Michigan; Dallas, Texas; Trenton, New Jersey; Manila, Philippines; London, Dublin, Berlin, and so on.

The apparatus in New York has given entirely satisfactory results to date.



THE DICK BELT WORKS AT PASSAIC, NEW JERSEY

THE OBITUARY RECORD.

WILLIAM DE FOREST BROWN.

A lamentable piece of news this month is the report of the death by drowning of William De Forest Brown, secretary and treasurer of the National India Rubber Co., near Bristol, Rhode Island, on December 9. Mr. Brown had gone out duck shooting, in a canoe, which encountered some mishap. He gave calls for help, but when several persons responded it was too late, and the last details can only be conjectured, since Mr. Brown was alone.

Mr. Brown was a native of Rehoboth, Massachusetts, where his mother, Mrs. Amanda M. Brown, now lives, together with several other relatives. His father, who was a manufacturer of cottons, died several years ago. William De Forest Brown became employed early in life as a bookkeeper by the Brownell, Field Co., of Providence. About 18 years ago he went to Bris-



THE LATE W. DE F. BROWN.

tol as secretary of the National India Rubber Co., which position he held continuously thereafter. About six years ago he was elected also to the office of treasurer of the company, succeeding Colonel Samuel P. Colt. Mr. Brown was at one time private secretary to Colonel Colt—now president of the United States Rubber Co.—and has sustained a close relation to those rubber interests with which Colonel Colt has been identified. He was, for instance, auditor of the branch stores of the United States Rubber Co. throughout the country, conducting this work in connection with his duties at the office of the rubber company.

Mr. Brown was married and is survived by a widow and a daughter, Miss Viola Brown, a recent graduate from the New England Conservatory of Music. He was a member of the Independent Order of Odd Fellows and of the Order of Woodmen. He was fond of athletics and some time was a director of the Bristol Young Men's Christian Association.

The public funeral was held on December 12 at the Congregational Church in Rehoboth, after private services at the Brown home in Bristol. The factory of the National India Rubber Co. was closed for the day of the funeral, out of respect to Mr. Brown. The pallbearers were Wendell R. Davis, William McCaw, D. A. Pratt, George Schlosser—superintendent of the Woonsocket Rubber Co.—Dr. George Carpenter, and Charles E. Emerson—purchasing agent for the United States Rubber Co. The interment was at the Rehoboth cemetery.

The body was viewed on Sunday by many citizens, and officers of the Bristol Train of Artillery acted as a guard of honor at the house of mourning. The interment was at Rehoboth.

THE GOODRICH ROAD SIGNS.

AN illustration here indicates the general appearance of the sign posts with which the B. F. Goodrich Co. (Akron, Ohio) are marking the main highway from Cleveland to New York city, after which similar posts are to be erected up into New England, and eventually throughout the country. While these signs are primarily for the benefit of automobilists, they cannot fail to be of service to the general public, since they are placed every four miles along the main routes of travel, and contain information of interest to users of these roads generally. The posts are of heavy creosoted timber, 4 x 4 inches, and 12 feet high. The round metal disk which forms the principal part of the sign is 2 feet in diameter, outside of which is a painted border representing a Goodrich tire and labeled suitably. Arrow blades point to the names of three towns—the next town, the next largest, and the ultimate destination, together with distances carefully reckoned. Projecting out from the disk and pointing to the remaining directions are two other blades, with additional details. A tin sign on each post contains explanations of symbols painted on the disk as to danger points and the location of repair shops and gasoline supplies.



THE GOODRICH TIRE SIGN POST.

News of the American Rubber Trade.

C. ROBERTS RUBBER CO. BOUGHT BY FABER.

EBERHARD FABER, long a partner of the late Christopher Roberts in the rubber business at Newark, New Jersey, and more recently an officer of the C. Roberts Rubber Co., has bought the remaining interest in that concern. The other shareholders were Mrs. George S. Coxe, the daughter of the late Mr. Roberts, and her husband, who is connected with the business, and Weldon Roberts, a nephew of Christopher Roberts.

This business was established in 1858 by Mr. Roberts, who shortly afterwards made a contract with what is now the firm of Eberhard Faber, of Brooklyn, to supply erasers for lead pencils—an arrangement which resulted in a large business, Mr. Faber coming in time to take all the production of the factory. Early in 1899 the company was incorporated under the laws of New Jersey as the C. Roberts Rubber Co., with Mr. Roberts, president; Mr. Faber, vice-president; the capital stock was \$150,000.

Mr. Roberts died in 1903. As the majority interest in the company became less and less identified with the management, the Faber firm expressed a wish to control completely the rubber manufacturing branch of their business, with the result that the other shareholders retired under a satisfactory agreement.

WESTERN RUBBER CO.—EXTENSION.

THE Western Rubber Co. (Goshen, Indiana), closed their works on December 21 to January 1, for the purpose of installing a new engine and other new machinery; also rearranging much of their prior equipment in their lately completed new building. The company were engaged in this work of renovation practically for the entire year of 1910, and now have a thoroughly equipped and modern rubber manufacturing plant.

NEW CRUDE RUBBER FIRM IN NEW YORK.

WILLEMS & Co. (No. 56 Pine street, New York) are a new firm engaged in the importation of African products, with crude rubber a specialty. They are engaged in the direct importation of African rubbers, Mr. Willems having been in Africa for the last 15 years, where he was manager of a large rubber estate in which he is interested, with headquarters at Leopoldville on the Congo, and he is considered an expert on rubber. Mr. Hugo Kastor, who has taken an interest in the business of Willems & Co., has been, for a number of years, and still is engaged successfully in other lines.

RUBBER GOODS DIVIDEND.

THE directors of the Rubber Goods Manufacturing Co. on December 7 declared from net earnings the forty-seventh regular quarterly dividend of $1\frac{3}{4}$ per cent. on the preferred shares, payable December 15, 1910, to holders of record at 3 P. M. on December 9.

INTERCONTINENTAL RUBBER CO.—DIVIDENDS.

At a meeting of the directors of the Intercontinental Rubber Co. [New York: December 5] it was voted to retire on January 1 25 per cent. of the outstanding preferred stock, reducing the total from \$2,000,000 to \$1,500,000. The preferred stock dividend requirements—at 7 per cent. per year—thus are reduced to \$105,000 annually. The directors declared the regular quarterly dividend of $1\frac{3}{4}$ per cent. on the preferred stock, payable January 1, 1911, to holders of record on December 20. The second dividend of 1 per cent. on the common stock was also declared, payable February 1, 1911, to holders of record on January 20. The first common stock dividend was payable November 1 last. The statement is authorized that for the quarter ended October 31 the

net earnings amounted to more than \$1,100,000. It was also stated that notwithstanding a shrinkage in the prices of rubber generally the contracts which the company have entered into already insure a profitable year. Giles W. Mead was elected a director to fill a vacancy.

BOSTON BELTING CO.'S ANNUAL.

At the recent annual meeting of the Boston Belting Co. the directors were reelected: Thomas A. Forsyth, J. H. D. Smith, Lewis M. Crane, Charles H. Moseley, Francis H. Stevens, William H. Furber, and George A. Miner. Thomas A. Forsyth was reelected president; J. H. D. Smith, treasurer and clerk; and Thomas Lang, Jr., and Charles J. Upham, auditors. The balance sheet as of September 30, 1910—with comparative figures for the preceding year—is appended:

ASSETS.			
	1909.	1910.	
Real estate land and buildings..	\$254,281.85	\$324,711.85	
Machinery	250,702.48	348,088.94	
Tools, furniture, and fixtures....	67,661.80		
Cash	40,065.26	79,618.73	
Bonds receivable		82,340.00	
Notes receivable		841.72	
Investment account	798,420.67	613,000.00	
Accounts receivable		120,089.44	
Merchandise	911,366.04	983,002.08	
Trade marks	100.00		
Sundries	550.00	7,917.15	
Total	\$2,353,148.10	\$2,559,609.91	
LIABILITIES.			
Capital	\$1,000,000.00	\$1,000,000.00	
Reserve fund	800,000.00	800,000.00	
Profit and loss.....	379,148.10	337,609.91	
Notes payable	174,000.00	422,000.00	
Total	\$2,353,148.10	\$2,559,609.91	

The usual quarterly dividend of 2 per cent.—No. 165—has been declared, payable January 1.

BOSTON WOVEN HOSE AND RUBBER CO.

THE Boston Woven Hose and Rubber Co. have filed with the secretary of state of Massachusetts a statement of their financial condition, as required by the statutes, for their business year ending August 31, 1910, the details of which are reproduced below, in comparison with which are given also the figures for the two preceding years:

ASSETS.			
	1908.	1909.	1910.
Patents	\$1.00	\$1.00	\$1.00
Land and buildings....	785,799.71	825,435.97	800,000.00
Machinery and tools....	508,300.78	562,340.97	450,000.00
Cash	77,984.35	403,168.00	96,428.24
Accounts receivable	467,564.05	468,518.00	553,922.90
Office furniture	1.00	1.00	1.00
Merchandise	674,113.69	665,948.96	756,283.51
Total	\$2,513,764.58	\$2,925,414.80	\$2,656,636.65
LIABILITIES.			
	1908.	1909.	1910.
Capital stock, common..	450,000.00	750,000.00	\$1,515,000.00
Capital stock, preferred..	\$750,000.00	\$750,000.00	
Loans	695,000.00	455,000.00	85,000.00
Accounts payable	43,669.33	47,789.20	57,902.71
Accrued wages		8,456.80	11,463.26
Guarantee account			87,270.68
Surplus	575,095.25	914,168.80	900,000.00
Total	\$2,513,764.58	\$2,925,414.80	\$2,656,636.65

BEAUTIFUL SNOW.

The winter season opened favorably for the rubber footwear trade, in respect to the amount of snowfall. The first snow in New York city occurred on December 5-6, amounting to about 6 inches. The first regular "Snow and Ice Bulletin" for the season, of the United States weather bureau, dated December 6, showed that a large part of the country east of the Rocky mountains was snowbound. The most southerly point covered by the snow map was Little Rock, Arkansas. Generally the line of snowfall followed the southern limits of the Ohio and Missouri river valleys. It may be added that at the date referred to the rubber shoe wearing area of the United States was for the most part covered, and that, compared with the same date of the year before, there was a large area in the Ohio valley and the middle Atlantic states covered, which were then bare.

The following details of snowfall in New York are supplied to THE INDIA RUBBER WORLD by the United States weather bureau. The depths are stated in inches and tenths; T signifies "trace".

	1905.	1906.	1907.	1908.	1909.	1910.
January	12.3	3.0	10.9	10.6	9.3	19.6
February	7.2	5.0	21.1	13.7	1.4	5.3
March	3.0	13.4	13.8	3.5	4.1	0.4
April	1	1	6.1	1	1	0.
May	1	1	T	0.6	1.0	1
December	0.7	0.5	4.4	5.1	11.4	*6.5
Total	30.2	21.0	56.3	33.5	27.4	28.8

[*To December 9, 1910.]

Totals by winters have been:

1905-06	22.1 inches	1908-09	20.7 inches
1906-07	52.4 inches	1909-10	34.7 inches
1907-08	32.2 inches	1910-11 (to date)	6.5 inches

GOODYEAR TIRES IN CANADA.

The Goodyear Tire and Rubber Co. of Canada, Limited, have been mentioned [see THE INDIA RUBBER WORLD, December 1, 1910—page 95] as having acquired the factory of the Durham Rubber Co., Limited, at Bowmanville, Ontario. Mr. F. A. Seiberling, of Akron, is president of the company. The officers in Canada are L. C. Van Bever, vice president, and C. H. Carlyle, secretary, with F. D. Saylor manager of the mechanical goods department. Branches are being established in Montreal, Vancouver, Winnipeg, St. Johns, and Calgary. The Goodyear company have already done a good business in the Canadian tire trade, and they were referred to recently as having in hand already orders for \$500,000 worth of tires for their Canadian factory.

ST. MUNGO COMPANY COMES TO AMERICA.

The St. Mungo Manufacturing Co., an important firm in the British golf ball trade, with a factory at Govan, Scotland, are entering the trade in the United States in a large way. They have formed for this purpose a corporation under the style St. Mungo Manufacturing Co. of America, of which A. C. Wood is president and treasurer and W. W. Mills secretary. Their factory is located at Arlington, New Jersey, being the premises occupied at one time by the Kempshall Manufacturing Co., and later by the succeeding firm, the American Golf Ball Co. The good will and business right of the last named has been acquired by the St. Mungo company, who are placing upon the market the "Colonel" ball, which has become so popular among British golfers.

MR. MATLACK JOINS THE AJAX-GRIEB.

Mr. JAMES C. MATLACK has been appointed secretary and general manager of the Ajax-Grieb Rubber Co., with headquarters at the new executive offices of the company, No. 1986 Broadway, New York. Mr. Matlack became prominent in the tire trade as president of the International Rubber Co., at Milltown, New Jersey. When the Michelin Tire Co., of France, decided to become established in America, they took over the Milltown plant and made Mr. Matlack first vice president and general manager, which further extended his acquaintance with the trade. Under

Mr. Matlack's direction the Ajax-Grieb company are inaugurating a most active selling campaign for 1911. The company's new quarters in New York are in larger and better equipped premises than in the past.

FORTY-THREE YEARS WITH THE WOONSOCKET COMPANY.

MICHAEL WALSH on November 19 completed his forty-third year as a watchman in the employ of the Woonsocket Rubber Co. He was the first watchman ever employed by the company, and when the "Alice" mill was built, in 1889, he was stationed there, where he has since remained on duty. Mr. Walsh enjoyed the friendship of the late Mr. Banigan, founder of the company. He is nearly 80, but expects to enjoy a good many years to come, particularly since his name will remain on the company's payroll during the rest of his life.

B & R RUBBER CO.—INCREASE OF CAPITAL.

At a meeting of shareholders of the B & R Rubber Co. (North Brookfield, Massachusetts: December 16) it was voted to increase the 7 per cent. cumulative preference capital from \$120,000 to \$160,000, by the issue of 400 shares of \$100 each, 200 of these shares to bear date January 1, 1911. The common stock remains at \$240,000, so that the total capital now arranged for will be \$400,000. There has been a steady growth in the business of the company of late, and the increased capital will be used for the introduction of new machinery and the making of other improvements.

CHANGES IN FOREIGN TARIFFS.

THE initial number of a publication entitled *Foreign Tariff Notes* has been issued by the bureau of manufactures of the Department of Commerce and Labor, at Washington. The scope of the new publication is a broad one, embracing changes in rates of import and export duty in all the important countries of the world; notice of proposed or pending revisions of foreign tariffs is also given, together with amendments of the customs and consular regulations. The first number covers the changes for the last five months, including a special chapter describing the regulations governing the admission of automobiles in several countries.

TIRE TRADE AT HOUSTON, TEXAS.

THE Diamond Rubber Co. (Akron, Ohio) are establishing their southern distributing agency at Houston, Texas, where a building especially adapted to their wants is being erected. It is reported that the company will carry a \$300,000 stock in Houston.

The Bering Tire and Rubber Co. has been organized at Houston, being located at No. 511 Travis street, with Mr. A. C. Bering, Jr., as manager. They will act as Texas distributing agents for the Empire Tire Co. (Trenton, New Jersey), and in addition conduct a jobbing trade in rubber goods generally.

The Hartford Rubber Works Co. have opened a branch in Houston, Texas, at No. 1120 Texas avenue, under the management of A. S. Baldwin.

TRADE NEWS NOTES.

THE regular quarterly dividend of 1½ per cent. on the preferred stock of the Manufactured Rubber Co. (Philadelphia) was payable on December 1.

The factory of the Webster Felt and Rubber Co. (Webster, Massachusetts) was started on the last day of November, and has been in operation since.

The Texas Rubber and Supply Co., of Houston, capitalized at \$100,000, have filed a voluntary petition in bankruptcy following the filing of civil suits against them. J. N. Taub was named as trustee, under a bond of \$50,000.

The plant of the Rickaby Rubber Manufacturing Co. (South Framingham, Massachusetts), which recently went into liquidation, was sold at auction, for \$3,100 above an existing mortgage of \$8,500 and unpaid taxes.

NEW INCORPORATIONS.

The Vail Rubber Co., October 26, 1910, under the laws of Illinois; capital, \$16,000. Incorporators: William A. Vail, Joseph Wright, and William E. McCoy. Principal office: No. 301 West Indiana street, Chicago. The business referred to has been carried on at the same address hitherto as the Vail Rubber Works, engaged in the manufacture of molded goods.

Hartford Tire and Auto Repair Co., November 15, 1910, under the laws of Connecticut; authorized capital, \$5,000. Incorporators: W. E. Johnson, E. A. Cordonnier, and E. S. Fletcher—all of Hartford, Connecticut.

Hood-Savage Rubber Co., November 16, 1910, under the laws of Maine; authorized capital, \$1,000,000. Incorporators: Frederic W. Savage, Granville, New York, and No. 36 Lincoln street, Boston; Frank G. Farrington, and Norman L. Bassett—both of Augusta, Maine. Some time ago was reported the incorporation of the F. W. Savage Rubber Co., to exploit some patents granted to Mr. Savage and to contract for the sale of certain products through the Hood Rubber Co., Boston. [See THE INDIA RUBBER WORLD, May 1, 1910—page 293.] The incorporation last formed is to succeed, that mentioned formerly.

Frontier Rubber Co., October 28, 1910, under the laws of New York; capital, \$10,000. Incorporators: Charles F. Benzing, John G. Stowe, and Charles A. Castor—all of Buffalo, New York.

Ironclad Tire Protector Co., December 2, 1910, under the laws of Illinois; capital, \$50,000. Incorporators: George S. Pines, Walter S. Baer, and Edward R. Newmann—all of Chicago. The attorneys of record filing the incorporation papers were Pines & Newman, Monadnock block, Chicago.

Interstate Rubber Co., November 15, 1910, under the laws of New York; capital, \$25,000. Incorporators: Charles Josephson, Morris Sieberman, and Charles H. Horowitz—all of No. 42 West Eighteenth street, New York.

London Waterproof Co., November 15, 1910, under the laws of New York; capital \$25,000. Incorporators: Julius Roggen, Sol Roggen—both of No. 1350 Madison avenue, and Louis Wener, No. 623 East One Hundred and Seventy-eighth street, New York city. The New York location of this business is No. 55 East Eleventh street; there are establishments abroad in Manchester and Paris.

Fear-Naught Tire and Rubber Co., December 7, 1910, under the laws of New Jersey; authorized capital, \$125,000. Incorporators: E. J. Forhan, G. F. Martin, and H. P. Jones—all of No. 154 Nassau street, New York. The office of the company is at No. 144 Water street, Paterson, New Jersey, where Dr. J. T. Cooper is the agent in charge. The purpose of the company is to exploit a tire patented by Dr. Cooper, and which has been described more than once in the pages of THE INDIA RUBBER WORLD.

Detachable Wheel Co. of America, December 10, 1910, under the laws of Delaware; authorized capital, \$50,000. Incorporators: Warren N. Akers, Millard C. Taylor, and William J. Maloney—all of Wilmington, Delaware. This incorporation was obtained by F. E. Lomas, Esq., 53 Courtfield garden, S. W., London, England.

The Federal Rubber Co., a corporation of Wisconsin, with a factory at Cudahy in that state, qualified to do business under the corporation laws of Illinois, November 30, 1910. The principal office in the latter state is at No. 1350 Madison avenue, Chicago.

The American Belting and Fabric Co. (Oakland, California), the incorporation of which was reported in THE INDIA RUBBER WORLD, December 1, 1910 (page 100), has been formed to operate a factory for the treatment of fabrics, paper, and leather with a coating proof against water and acids. This treatment is referred to also as rendering such substances proof against oils, which they may come in contact with in protecting working machinery. The same application has been made in cheese-cloth, rendering it waterproof. F. L. McGillan is president of the company.

MR. FIELD LEAVES THE HARTFORD.

HARRY E. FIELD has resigned from the positions of vice-president and general manager of the Hartford Rubber Works Co. (Hartford, Connecticut) to become president of the Rambler Automobile Co. of New York, which is the Eastern branch of The Thomas B. Jefferey Co. (Kenosha, Wisconsin). Mr. Field will have the management of the Jefferey interests in all of the territory east of Buffalo and Pittsburgh, including New England and the South Atlantic states. Mr. Field has been connected with the Hartford company for six years. The change dates from January 1.

ELECTRIC HOSE AND RUBBER BRANCHES.

The Electric Hose and Rubber Co. (Wilmington, Delaware), manufacturers of a full line of rubber hose by their special methods, have opened two new branch stores, in order to better serve their trade. One is in New York, at No. 19 Warren street, in charge of Mr. A. W. Archer, Jr., manager; the other is in San Francisco, at No. 562 Howard street, with Mr. F. C. Anderson, manager.

A NEW SCHOOL OF RUBBER CHEMISTRY.

THE Kensington Association Institute, of Philadelphia, have opened a school of industrial chemistry. The lectures and laboratory work are limited to organic chemistry and are carried on under four departments, one of which is Chemistry of Rubber and Forest Products. The work in this department is designed to include a study of the raw materials, processes, and products characteristic of this field. The curing, loading, vulcanizing, and reclaiming of rubber, and the use of the same in the manufacture of decorative and useful articles. It is considered desirable to extend the field so as to cover the related forest products, as some of these are used to a considerable extent in the rubber industry. The director of the school is Dr. Frederic Dannerth, No. 204 Walnut place, Philadelphia.

DIVIDENDS DECLARED.

A QUARTERLY dividend of 1 per cent. on the preferred stock and 1 per cent. on the common stock of the Walpole Rubber Co. (Walpole, Massachusetts) has been declared, payable January 15, to holders of record January 1, 1911.

The semi-annual dividend of 7 per cent. on the preferred stock of the Converse Rubber Co. (Malden, Massachusetts) was payable on December 19.

TRADE NEWS NOTES.

THE distributing agency for Firestone tires and demountable rims for his territory has been secured by Joseph H. Walsh, No. 12 East Adams street, Jacksonville, Florida.

The "Hinge Edge" line of conveyor belts patented and owned by John J. Ridgway, are now made exclusively by the Quaker City Rubber Co. (Philadelphia). These belts are sold to the consumer only.

A recent display of india-rubber in its various stages from the crude product, through the processes of manufacture, to finished goods in great variety, made by The Maumee Rubber Co. (Toledo, Ohio), of which Mr. A. D. Wentz is president and manager, is referred to as having been viewed with interest by many visitors, during two weeks.

The Canadian Rubber Co., of Montreal, Limited, have taken out a building permit for an additional factory near their existing plant in Montreal, the estimated cost of which is \$220,000.

The W. D. Allen Manufacturing Co. (No. 151 Lake street, Chicago) advise that they will be issuing shortly a new catalogue of lawn sprinklers and other like goods, to be known as Catalogue No. 29, and which the trade is invited to ask for.

The Goodyear Tire and Rubber Co., of Canada, who, as has been stated in these columns, have acquired a factory at Bowmanville, Ontario, where they are at work already, state that it is their intention to introduce their products—tires and mechanical goods—in British territory all over the world.

UNITED STATES RUBBER CO.'S ISSUES.

TRANSACTIONS on the New York Stock Exchange for four weeks, ending December 17:

COMMON STOCK, \$25,000,000.

For the year—High, \$24½; Jan. 3; Low, 22½, July 26.
Last year—High, 27½; Low, 27.

Week November 26	Sales 500 shares	High 36½	Low 34½
Week December 3	Sales 2,800 shares	High 35	Low 32
Week December 10	Sales 2,100 shares	High 33	Low 32
Week December 17	Sales 1,700 shares	High 34½	Low 32½

For the year—High, \$24½; Jan. 3; Low, 22½, July 26.
Last year—High, 27½; Low, 27.

FIRST PREFERRED STOCK, \$868,344.00.
Last Dividend, October 31, 1910—2%.

Week November 26	Sales 300 shares	High 111	Low 110
Week December 3	Sales 715 shares	High 110	Low 109
Week December 10	Sales 705 shares	High 110	Low 109
Week December 17	Sales 500 shares	High 110	Low 109¼

For the year—High, 116½; Jan. 10; Low, 99, July 26.
Last year—High, 123½; Low, 98.

SECOND PREFERRED STOCK, \$9,965,000.
Last Dividend, October 31, 1910—1½%.

Week November 26	Sales 200 shares	High 72½	Low 72¾
Week December 3	Sales 300 shares	High 72	Low 71½
Week December 10	Sales 400 shares	High 73¾	Low 72
Week December 17	Sales 100 shares	High 73	Low 73

For the year—High, 84, Jan. 3; Low, 59½, July 26.
Last year—High, 89½; Low, 67½.

SIX PER CENT. TRUST GOLD BONDS, \$19,500,000.

Week November 26	Sales 33 bonds	High 102¾	Low 102¾
Week December 3	Sales 77 bonds	High 102½	Low 102½
Week December 10	Sales 30 bonds	High 103	Low 102¾
Week December 17	Sales 28 bonds	High 103	Low 102¾

For the year—High, 104½; Jan. 15; Low, 101½, July 30.
Last year—High, 106; Low, 102¼.

GOODYEAR TIRE AND RUBBER CO. ACCOUNTS.

THE annual balance sheet of the Goodyear Tire and Rubber Co., as of October 31, 1910, is shown herewith, compared with the corresponding figures for the preceding year. The item of "notes receivable" in the assets is referred to as being "for company's capital stock secured."

ASSETS.

	1909.	1910.
Plant and property	\$920,355.42	\$1,484,036.35
Patents	1.00	1.00
Securities owned	5,001.00	86,519.23
Notes receivable	97,474.42	141,942.55
Inventory		1,212,060.51
Notes and accounts receivable.....		1,076,864.83
Cash on hand	1,549,348.98	576,359.51
Prepaid rentals, etc.....	25,808.04	40,220.88
Total	\$2,597,988.86	\$4,612,004.86

LIABILITIES.

Capital, preferred	\$432,100.00	\$1,000,000.00
Capital, common	904,700.00	2,286,100.00
Current liabilities	431,379.47	227,085.07
Reserved:		
For fluctuations in crude rubber market	350,000.00	500,000.00
For doubtful accounts.....	63,889.72	94,464.26
For depreciation	192,664.61	260,713.29
Surplus	223,255.06	243,642.24
Total	\$2,597,988.86	\$4,612,004.86

S. P. WETHERILL CO.—CHANGE OF STYLE.

THE Philadelphia firm The S. P. Wetherill Co., manufacturers and importers of various rubber manufacturers' supplies, have adopted the name of The Westmoreland Chemical and Color Co., from January 1. This has been due to the desire of Mr. Wetherill to retire from active business, and his resignation as president of the company. The officers are now Henry C. Stewart, president; Milton Birch, vice president; William R. Paul, treasurer; and John C. Nippes, secretary.

THE KNOX HOSE COUPLINGS.

THE line of couplings made by the Knox Manufacturing Co. No. 19 North Seventh street, Philadelphia, for high pressure

and drill hose, are offered to the trade on the recommendation that they will not injure the tube of hose. The company will be pleased to send an illustrated list of these goods to all persons in the trade who may be interested.

THE NEWEST CRUDE RUBBER.

THE Durango Commercial Co. has been incorporated in Michigan, with headquarters in Detroit, to exploit rubber from a Mexican tree called "palo colorado," which is reported to be particularly abundant in the state of Durango. This development is due to studies made by Professor John R. Allen, of the University of Michigan, during a visit some months ago to Mexico. The officers of the company are Joseph H. Hunter, president; Henry W. Campbell, vice president; John R. Allen, secretary; Herbert W. Noble, treasurer; J. Wilfred Thompson and Emil E. Keller, directors.

NEW CALENDARS.

THE Oxford Tripoli Co., Limited (No. 11 Broadway, New York) send us a handsome calendar for 1911 with a tear-off leaf for each month embellished with a handsome illustration of a scene in Nova Scotia in the vicinity of their mines of fossil flour.

The New Jersey Rubber Co. (Lambertville, New Jersey), send out again the "Handy Desk Calendar." It embraces a memorandum leaf for each day in 1911, and is a useful desk fixture.

SALE OF THE O'SULLIVAN COMPANY.

THE sale is reported of the business of the O'Sullivan Rubber Co. (Lowell, Massachusetts) to New York capitalists. This company was incorporated in Maine, with \$50,000 capital, in 1899, since which time a very large business has been built up in rubber soles and heels. While Lowell has been the home of the company, their goods have been manufactured by The B. F. Goodrich Co., of Akron. It is understood that Humphrey O'Sullivan, who has always been the active head of the business, will continue as treasurer, and J. Munn Andrews as secretary. It is reported that a new corporation will be formed.

PERSONAL MENTION.

AT the recent banquet of the Victorian Club—a Boston social organization composed of Britishers born—at the Hotel Westminster, in Boston, among the speakers was Mr. Elston E. Wadbrook, a former president of the club. Mr. Wadbrook, who is now a resident of New York, where, by the way, he is interested in rubber, talked of "old times," demagoguery in the United States and the growth of sanity, and other topics of general application, besides which he brought a message of good will from the British and Universities Club of New York.

AT a meeting of a committee of business men of Rhode Island, held in Providence on December 12, a resolution was adopted recommending the support of all Republicans in the state for the candidacy of the Hon. Le Baron B. Colt for United States senator.

MR. Edgar B. Davis, second vice-president of the General Rubber Co., sailed from New York on December 10, for the Far East. Mr. Davis is concerned in the development in that region of crude rubber properties for the United States Rubber Co., of which the General Rubber Co. is a subsidiary. This is Mr. Davis's fourth visit to the Far East and the third in the interest of the rubber company.

MR. Lester Leland, second vice-president of the United States Rubber Co., sailed from New York on the last day of November for an extended visit to Europe.

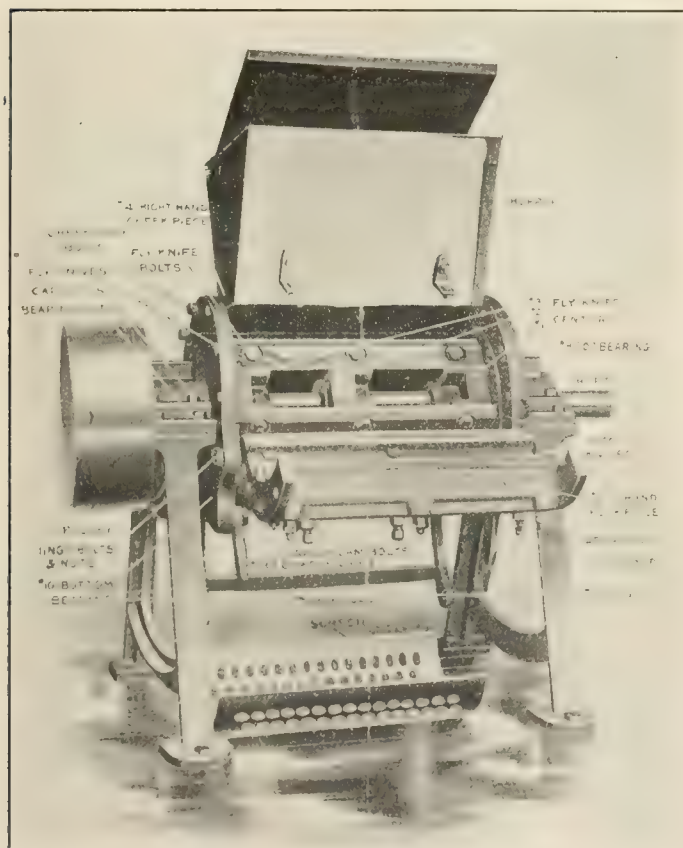
THE Foster Rubber Co. (Boston) have removed their office and sales room to No. 105 Federal street. Previously their office and sales room have been in different locations, and their combination, in more commodious quarters, will enable the company to better serve the interests of their customers.

A NEW TIRE FACTORY.

THE Frontier Rubber Co. (Buffalo, New York), the incorporation of which is noted in another column, have begun the manufacture of automobile tires, tire repair stock, and mechanical rubber goods, in addition to maintaining a tire and tube repair department, all under the supervision of C. A. Castor. The sales department is in charge of J. C. Milsom. The officers of the company are C. F. Benzing, president and treasurer; John G. Stowe, M. D., vice president; C. A. Castor, secretary and superintendent.

ROTARY CUTTER FOR RUBBER SCRAP.

THE illustration herewith relates to a patent rotary cutter of a type which is coming into use in dealing with cured or uncured scrap rubber instead of the cracker mills for this purpose in general practice in the past. This is the Ball & Jewell Patent Cutter and is made in various sizes, that shown on this page being designated No. 1, though all the sizes are constructed on the same system. The No. 1 size is used by rubber manufacturers to reduce factory scrap, whether cured or uncured; weight, 1,300 pounds; speed, 900 revolutions; power, 5 to 15 H.P.; floor space, 4' 6" x 2' 10"; six-inch double belt.



BALL & JEWELL ROTARY CUTTER.

The size No. 2, for use in reclaiming plants, weighs about 2,300 pounds, is 20 to 40 H.P., and occupies a floor space of 5' 8" x 3' 6". This machine will cut 100 pounds of shoe scrap per minute, using a 2-inch screen in the cutter. The size of product is determined by the screen used. This machine may be used for any kind of rubber scrap, including hard rubber. Both sizes of this cutter may be used for cutting up guayule shrub in Mexico.

There is a smaller size—No. 0—designed for laboratory work and also in practical application for cutting up hot-water bottles, bulbs, tubing, and the like. [E. P. Mallinson, No. 23 Warren street, New York.]

SOME NOVELTIES IN RUBBER.

AIR-WEIGHT RUBBER ANKLE-ETS.

THIS is really a zephyr-weight "fitted" leggin, running from the ankle half way to the knee, made of "light as air rubber," fastening with handmade catches. They fold into such a small compass that a pair may be carried in a lady's pocket-book. They not only keep the ankle warm, but they prevent the skirt from rubbing the shoes and stockings. They are made in three sizes and are one of the neatest ladies' footwear adjuncts yet produced. [Howe Rubber Co., Newark, New Jersey.]

HOMEIER'S PATENTED COMB.

THE cut which accompanies this paragraph tells its story so well as to render an extended description unnecessary. The idea, as will be seen, is to provide a means for replacing any

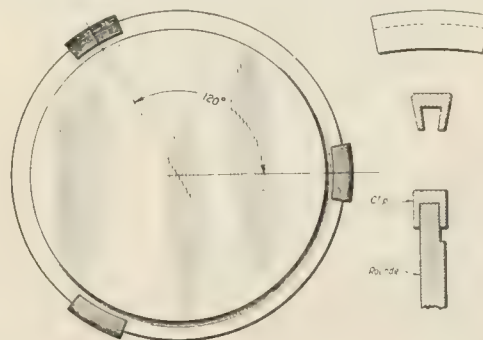


HOMEIER'S PATENTED COMB.

teeth which may be broken in the comb by use. The idea of the inventor is to apply this idea to the manufacture of hard rubber combs. [George P. Homeier, No. 26 Ladd street, Akron, Ohio.]

RUBBER CLIP FOR SIGNAL ROUNDELS.

THE illustration applies to a rubber clip for roundels for railway signaling. Three rubber clips, arranged as shown in the illustration, are referred to as sufficient for roundels 6½ inches in diameter, while four clips are used on roundels of larger size. The advantage of the use of rubber as compared with putty is pointed out as likely to be welcomed by the maintainer, who in



RUBBER CLIP FOR SIGNAL ROUNDELS.

winter often is compelled to replace a broken roundel with the thermometer below zero and his putty defying all efforts to keep it soft and usable. This clip is the invention of E. J. Relph. [Guilford S. Wood, Great Northern building, Chicago.]

ANOTHER fad has been imported from the other side. This time it is in connection with the tires on automobiles. In England it is customary for the chauffeurs to prepare the tires on the car under their charge as carefully as the body. The former are carefully whitened with pipeclay, thus giving the car a very smart appearance. The rubber foot mats and spare tires also receive a daily coat of pipeclay. If one stands on Fifth avenue at Forty-second street long enough any afternoon he will learn that this stunt has made a hit in this country. Several of the companies operating taxicabs from hotels have the tires and mats on their cars rewhitened every day.—*New York Sun*.

RUBBER CLUB OF AMERICA BANQUET.

THE executive committee of the Rubber Club of America announced that the midwinter banquet of the club will be held on Wednesday evening, January 11, at Delmonico's, New York, at 6.30 p. m. The special committee appointed to plan the dinner have arranged a program that promises to be of exceptional interest. In addition to distinguished speakers who will be present as guests of the Club, prominent officials in the great rubber companies in New York, Akron, and other centers will attend and will speak. The week for which the banquet is set is notable as being that in which the great automobile exhibition will be held at Madison Square Garden, a feature that in itself will bring to New York a large gathering of men whose interests center in the rubber industry.

The admirable planning which has been done for the coming banquet has been due to the energy and painstaking of a Committee of Arrangements—essentially a New York committee—consisting of Messrs. George B. Hodgman, Henry C. Pearson, Arthur W. Stedman, Elston E. Wadbrook, and Robert B. Baird.



[FROM THE COVER OF THE OFFICIAL ANNOUNCEMENT.]

In the sketch map of the Western Hemisphere shown here, the lower half represents a figure supporting a rubber tree, while the upper half suggests a manufacturing establishment.

Not the least interesting fact in relation to the coming banquet is that it will be the first given by the Club which its members living in and near New York can regard as a "home affair," all preceding affairs of the kind having occurred in New England. Members expecting to attend are requested to notify the secretary of the Club, Mr. George H. Mayo, No. 197 Congress street, Boston, not forgetting to say if guests will accompany them.

Among the speakers will be Mr. Creswell MacLaughlin, a noted after dinner speaker; the Hon. John Barrett, director of the Pan American Union, and Mr. H. E. Raymond.

There is to be a musical program, expected to be of unusual excellence, including special features.

AN AWARD FOR "BAKELITE."

ON November 9, 1910, the City of Philadelphia, on the recommendation of the Franklin Institute, awarded the John Scott Legacy Premium and Medal to Dr. L. H. Baekeland, of Yonkers, New York, for his invention of "Bakelite," in accordance with the report of the institution's Committee on Science and Arts, adopted May 4, 1910.

The City of Philadelphia holds in trust under the legacy of

John Scott, of Edinburgh, a sum of money the interest of which is to be used for the encouragement of "ingenious men and women who make useful inventions." The legacy provides for the distribution of a medal inscribed "to the most deserving," and a money premium to such persons whose inventions shall merit the same. The examination of the inventions submitted for the medal and premium has been delegated by the Board of City Trusts, of the City of Philadelphia, to the Franklin Institute, and the institution, under the competent assistance of its Committee on Science and the Arts, undertakes to make the investigations free of charge and to recommend for the award all meritorious inventions.

FOR A RUBBER FACTORY IN BRAZIL.

AN inquiry comes to THE INDIA RUBBER WORLD, through an important export house, in behalf of a correspondent in Brazil, for details regarding the equipment necessary for the manufacture of the following lines of rubber goods: Rubber covers to protect coffee beans when lying on the ground to dry; automobile and carriage tires; tubing; nipples for nursing bottles; raincoats; elastic sides for shoes. THE INDIA RUBBER WORLD already [November 1, 1910—page 57] has had a report on a projected rubber factory near São Paulo, Brazil—an important coffee region—and it appears that the enterprise to which the inquiry mentioned in this article relates is the same as that already mentioned.

THE recent high prices obtained for crude were reflected in the profits of the Amazon Steam Navigation Co., Limited, for the year ended June 30, 1910, at the thirty-eighth annual meeting of the company, held in London on December 14. The final dividend, payable on December 20, made the total 7 per cent., or equal to the highest paid for many years; during several years not more than 4 or 5 per cent. was paid.

ADDITIONAL MARKET NOTES.

New York.

IN regard to the financial situation, Albert B. Beers (broker in crude rubber and commercial paper, No. 68 William street, New York) advises as follows: "During December there has been quite a fair demand for commercial paper, at rates somewhat lower than ruled through the fall, the best known rubber names going now at $5\frac{1}{4}$ @ $5\frac{1}{2}$ per cent., and those not so well known 6 @ $6\frac{1}{4}$ per cent."

NEW YORK PRICES FOR NOVEMBER (NEW RUBBER.)

	1910.	1909.	1908.
Upriver, fine.....	\$1.36 @ 1.52	\$1.93 @ 2.03	\$1.12 @ 1.30
Upriver, coarse.....	1.02 @ 1.07	1.17 @ 1.21	.82 @ 1.00
Islands, fine.....	1.20 @ 1.28	1.72 @ 1.84	1.04 @ 1.24
Islands, coarse.....	.73 @ .75	.69 @ .72	.54 @ .72
Cametá.....	.75 @ .78	.80 @ .84	.56 @ .72

African Rubbers.

NEW YORK STOCKS (IN TONS).

November 1, 1909.....	134	June 1, 1910.....	90
December 1.....	134	July 1.....	120
January 1, 1910.....	228	August 1.....	250
February 1.....	134	September 1.....	300
March 1.....	161	October 1.....	375
April 1.....	121	November 1.....	100
May 1.....	125	December 1.....	140

Para.

R. O. AHLERS & Co. report [November 21]:

The market is decidedly firmer, with advancing prices, large transactions having taken place for both American and European account.

R. O. AHLERS & Co. report [December 1]:

The market is steady. Holders are not anxious to sell at present prices. December receipts are not expected to be very abundant, a view which gains in probability with the news of fresh political troubles having broken out in the federal territory of the Acre.

Review of the Crude Rubber Market.

THE condition of the crude rubber market during the month has been one of quiet and weakness, with lower rates at the closing. This, however, is a period of dullness in trade generally. Not only do the holidays occurring annually at this date bring many kinds of business to a standstill, but opportunity is taken of the season for inventorying. The opinion is freely expressed in the crude rubber trade that immediately after the New Year a more active demand will develop, with an advance in prices. On the other hand will be found those who do not look for much higher prices until well nigh the end of the Pará crop season.

Arrivals at Pará (including caucho) during the first half of four crop seasons have been as follows (in tons):

	1907.	1908.	1909.	1910.
July	1,370	1,300	1,400	2,340
August	1,500	1,890	1,870	1,870
September	2,410	2,355	2,020	1,980
October	3,200	3,460	3,275	3,170
November	3,200	3,430	4,640	3,790
December	2,560	3,300	3,510	2,140
Total	14,240	15,735	16,715	14,610

[a To December 17, 1910.]

At the London auction on December 13, at which 236 tons Malaya and 44 tons Ceylon plantation rubber was offered, there was a fair general demand, and everything sold. The sale opened with a drop of about 3d. to 4d. all round on last auction's rates; as the bidding progressed prices went still lower, and at the close the difference was about 4d. to 6d. down on the prices realized a fortnight before. The best price paid was 6s. 9½d. [= \$1.65] for smoked sheet. Good to fine sheet and biscuit sold up to 6s. [= \$1.46].

At the Antwerp auction on December 14 the offerings and sales were as follows (in tons):

	Offered.	Sold.
Congo sorts.....	192	165
Other sorts—forest.....	72	5
Plantation sorts.....	55	53
Total	319	223

Although a few parcels sold at inscription prices, and others brought more, there was an average decline on the whole of about 3.88 per cent. on the prices realized at the preceding sale.

NEW YORK QUOTATIONS.

Following are the quotations at New York for Pará grades, one year ago, one month ago, and December 30—the current date:

PARÁ.	Jan. 1, '10.	Dec. 1, '10.	Dec. 30.
Islands, fine, new.....	163@164	128@129	118@119
Islands, fine, old.....	none here	none here	122@123
Upriver, fine, new.....	178@180	150@152	137@138
Upriver, fine, old.....	none here	152@153	140@141
Islands, coarse, new.....	—@ 70	72½@73½	70@ 71
Islands, coarse, old.....	none here	none here	none here
Upriver, coarse, new.....	111@112	108@109	100@101
Upriver, coarse, old.....	none here	none here	104@105
Cametá	79@ 80	75@ 76	72@ 73
Caucho (Peruvian), ball.....	101@102	105@106	99@100
Caucho (Peruvian), sheet.....	—@ 85	none here	none here

PLANTATION PARÁ.

Fine smoked sheet.....	179@180	165@166	156@157
Fine pale crepe.....	181@182	156@157	143@144
Fine sheets and biscuits.....	—@ —	150@151	138@139

CENTRALS.

Esmeralda, sausage	—@100	96@a 97	94@a 95
Guayaquil, strip	84@ 85	none here	none here
Nicaragua, scrap	97@ 98	92@ 93	89@ 90
Panama	82@ 83	none here	none here

Mexican, scrap ..	96@ 97	92@ 93	88@a 89
Mexican, slab	82@ 83	60@ 61	50@a 57
Mangabeira, sheet	67@ 72	75@ 76	75@ 76
Guayule	60@ 63	65@ 66	65@ 66
Balata, sheet	—@ —	—@ 80	74@a 75
Balata, block	—@ —	—@ 50	52@ 53

AFRICAN.

Lopori, ball, prime.....	133@134	125@126	120@121
Lopori, strip, prime.....	none here	none here	none here
Aruwimi	110@a 117	110@111	104@105
Upper Congo, ball, red.....	121@122	115@116	108@109
Ikelemba	none here	none here	none here
Sierra Leone, 1st quality.....	—@117	124@125	119@120
Massai, red	—@ 117	124@125	119@120
Soudan niggers	—@ 106	112@113	105@106
Cameroon, ball	77@ 78	66@ 67	65@ 66
Benguela	—@ 74	85@a 86	82@ 83
Madagascar, pinky	98@a 99	none here	none here
Accra, flake	22@ 23	45@ 46	44@ 45

EAST INDIAN.

Assam	94@ 95	none here	93@ 94
Pontianak	6@a 6½	5½@a 5½	6@a 6¼
Borneo	55@ 64	none here	none here

Late Pará cables quote:

	Per Kilo.		Per Kilo.
Islands, fine	\$5150	Upriver, fine	78200
Islands, coarse	2\$700	Upriver, coarse	58200
		Exchange	105 10d.

Latest Manáos advices:

Upriver, fine	7\$000	Exchange	10 11 10d
Upriver, coarse	4\$500		

Statistics of Para Rubber (Excluding Caucho).

NEW YORK.

	Fine and Medium.	Coarse.	Total 1910.	Total 1909.	Total 1908.
Stocks, October 31.....tons	155	56 =	211	216	221
Arrivals, November.....	1,074	358 =	1,432	1,734	1,799
Aggregating	1,229	414 =	1,643	1,950	2,020
Deliveries, November.....	1,101	386 =	1,487	1,732	1,772
Stocks, November 30.....	128	28 =	156	218	248

PARÁ.

	1910.	1909.	1908.
Stocks, October 31.....tons	875	230	520
Arrivals, November.....	3,550	4,370	3,230

ENGLAND.

	1910.	1909.	1908.
Stocks, October 31.....tons	875	230	520
Arrivals, November.....	3,550	4,370	3,230

Aggregating	4,425	4,600	3,750
Deliveries, November...	3,235	3,215	3,275

Stocks, November 30.	1,190	1,385	475
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	1910.	1909.	1908.
World's visible supply, November 30.....tons	4,591	3,757	2,362
Pará receipts, July 1 to November 30.....	11,085	11,830	11,060
Pará receipts of caucho, same dates.....	2,090	1,530	1,370
Afloat from Pará to United States, Nov. 30	420	839	700
Afloat from Pará to Europe, November 30..	1,490	815	654

Rubber Scrap Prices.

LATE New York quotations—prices paid by consumers for car-load lots, per pound—are slightly lower, as follows:

	December 1.	January 1.
Old rubber boots and shoes—domestic...	10½@a 10¼	9½@a 9¾
Old rubber boots and shoes—foreign....	9½@a 10	9@a 9½
Pneumatic bicycle tires	5½@a 5½	5@a 5¼
Automobile tires	8½@a 8¾	8½@a 8½
Solid rubber wagon and carriage tires..	9½@a 9¾	9@a 9½
White trimmed rubber.....	12 @12½	11½@a 12
Heavy black rubber.....	6¼@a 6½	6@a 6¼
Air brake hose.....	5¼@a 5½	5@a 5½
Garden hose	2¼@a 2½	2@a 2¼
Fire and large hose.....	2½@a 3	2½@a 3
Matting	1½@a 1¼	1@a 1½

IMPORTS FROM PARA AT NEW YORK.

[The Figures Indicate Weight in Pounds.]

DECEMBER 5.—By the steamer *Cuthbert*, from Manaus and Pará:

	Time	Medium	Coarse	Cauch	Total.
Para & Amazon	176,400	12,200	46,600	8,400	243,600
General Rubber Co.	52,200	8,700	3,000		63,900
New York Commercial Co.	8,600	1,600	5,800	300	16,300
Wallace L. Gough & Co.	1,800	300	10,600		12,700
Total	239,000	22,800	66,000	8,700	336,500

DECEMBER 5.—By the steamer *Sergipe*, from Pará:

A. T. Morse & Co.	143,600	6,100	90,400		240,100
Para & Amazon	57,400	6,000	90,800	21,800	176,000
New York Commercial Co.	66,800	15,700	26,400	700	109,600

H. A. Astlett	16,100	5,900		22,000
Hagemeyer & Brunn	7,600	12,000		19,600
Henderson & Korn	4,300	11,600		15,900
Total	295,800	27,800	237,100	22,500=583,200

DECEMBER 15.—By the steamer *Basil*, from Manaus and Pará:

Poel & Arnold	242,100	62,300	81,400	11,100=366,900
A. T. Morse & Co.	81,200	50,800	78,400	700=211,100
General Rubber Co.	112,900	25,100	18,500	2,300=158,800
New York Commercial Co.	72,500	22,200	21,900	.....=116,600
H. A. Astlett	16,400	3,200	26,400	.....=46,000
C. P. dos Santos	13,500	1,800	9,900	.....=25,600
Hagemeyer & Brunn	.....	.....	7,800	.....=7,800
Henderson & Korn	.....	.....	8,000	.....=8,000
Total	509,000	165,400	252,300	14,100 946,800

PARA RUBBER VIA EUROPE.

Nov. 21.—By the *Carmania*—Liverpool:

N. Y. Commercial Co. (Fine)	13,000
James T. Johnstone (Fine)	17,000
Poel & Arnold (Coarse)	3,500
Total	33,500

Nov. 22.—By the *Clyde*—Mollendo:

General Rubber Co. (Fine)	11,500
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Nov. 23.—By the *Mauretania*—Liverpool:

N. Y. Commercial Co. (Fine)	50,000
Poel & Arnold (Fine)	7,000
Poel & Arnold (Coarse)	15,000
Total	72,000

Nov. 28.—By the *Cala*—Liverpool:

N. Y. Commercial Co. (Fine)	34,000
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Dec. 3.—By the *Campania*—Liverpool:

Rubber Trading Co. (Fine)	8,000
Robinson & Co. (Fine)	10,000
Poel & Arnold (Coarse)	5,500
Total	23,500

Dec. 5.—By the *Cedric*—Liverpool:

A. T. Morse & Co. (Cauch)	9,000
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Dec. 7.—By the *La Gascogne*—Havre:

A. T. Morse & Co. (Coarse)	9,000
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Dec. 7.—By the *President Grant*—Hamburg:

A. T. Morse & Co. (Fine)	35,000
N. Y. Commercial Co. (Fine)	11,500
Wallace L. Gough Co. (Fine)	10,000
Total	56,500

Dec. 12.—By the *Carmania*—Liverpool:

N. Y. Commercial Co. (Fine)	140,000
Henderson & Korn (Fine)	7,000
Raw Products Co. (Coarse)	15,500
Total	162,500

Dec. 13.—By the *Javary*—Iquitos:

H. A. Astlett (Fine)	11,500
H. A. Astlett (Coarse)	5,000
Total	16,500

Dec. 13.—By the *Arabic*—Liverpool:

Wallace L. Gough Co. (Fine)	5,000
Rubber Trading Co. (Fine)	4,500
Total	9,500

OTHER NEW YORK ARRIVALS.

CENTRALS.

[This sign, in connection with imports of Centrals, denotes Guayule rubber.]

Nov. 21.—By the <i>Carmania</i> —Liverpool:	
Poel & Arnold	65,000

Nov. 21.—By the *Stigismund*—Colombia:

Caballero & Blanco	4,500
A. Held	3,000
Maitland, Coppell & Co.	1,500
Oglesias & Martinez	1,500
Total	10,500

Nov. 21.—By the *El Sol*—Galveston:

Continental-Mexican Rubber Co.	*180,000
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Nov. 22.—By the *Clyde*—Colombia:

Maitland, Coppell & Co.	3,500
G. Amsinck & Co.	2,500
L. Hagenaers & Co.	2,500
Caballero & Blanco	2,000
Delima Cortisoz & Co.	1,500
Honda Commercial Co.	1,000
Total	13,000

Nov. 22.—By the *Tennysen*—Bahia:

J. H. Rossbach & Bros.	6,500
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Nov. 23.—By the *El Valle*—Galveston:

Continental-Mexican Rubber Co.	*160,000
Ed. Maurer	*22,500
Charles T. Wilson	*11,500
Total	*194,000

Nov. 22.—By the *Colon*—Colon:

G. Amsinck & Co.	13,000
H. Feltman & Co.	4,000
Isaac Brandon & Bros.	3,500
National Sewing Machine Co.	3,000
Piza, Nephews & Co.	2,500
Dumarest Bros. & Co.	2,000
A. T. Morse & Co.	2,000

Charles E. Griffin	1,500
Roldan & Van Sickle	1,500
J. Sambrada Co.	1,000
Larman & Kemp	1,000
Total	35,000

Nov. 25.—By the *Mauretania*—Liverpool:

Poel & Arnold	25,000
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Nov. 26.—By the *Martha*—Fronteira:

Harburger & Stack	3,500
F. Steiger & Co.	2,500
Isaac Kuhn	1,000
Total	7,000

Nov. 26.—By the *Cala*—New Orleans:

Eggers & Heinlein	4,500
Manhattan Rubber Manufactur	
ing Co.	4,500
A. T. Morse & Co.	2,000
Robinson & Co.	2,000
Total	13,000

Nov. 26.—By the *Delia*—Galveston:

Continental-Mexican Rubber Co.	*75,000
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Nov. 28.—By the *El Valle*—Tampico:

Ed. Maurer	*80,000
Poel & Arnold	*35,000
For Europe	*35,000
Total	*150,000

Nov. 29.—By the *Adelantada*—Colombia:

Pablo Calvet & Co.	3,500
Suzarte & Whitney	3,500
Kunhardt & Co.	1,500
R. Del Castillo & Co.	1,000
Delima Cortisoz & Co.	1,000
Total	10,500

Nov. 29.—By the *El Mundo*—Galveston:

Continental-Mexican Rubber Co.	*80,000
E. S. Churchill	*10,000
Total	*90,000

Nov. 30.—By the *Proteus*—New Orleans:

Manhattan Rubber Manufactur	
ing Co.	4,500
T. N. Morgan Co.	1,000
Total	5,500

Nov. 30.—By the *Prinz Joachim*—Colon:

A. Santos & Co.	8,000
G. Amsinck & Co.	7,000
Pablo Calvet & Co.	2,000
Suzarte & Whitney	1,500
A. Held	1,500
Mecke & Co.	1,000
Gillespie Bros. & Co.	1,000
A. M. Capen's Sons	1,000
Wessels Kulenkampf & Co.	1,000
A. Rosenthal & Sons	1,000
Isaac Brandon & Co.	1,000
Total	26,000

Dec. 1.—By the *El Monte*—Galveston:

Continental-Mexican Rubber Co.	*75,000
Ed. Maurer	*10,000
Total	*85,000

Dec. 1.—By the *Indian Prince*—Bahia:

Adolph Hirsch & Co.	5,500
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Dec. 1.—By the *Frutera*—Honduras:

A. Rosenthal & Sons	4,000
Silva Bussenius & Co.	1,500
Total	5,500

Dec. 3.—By the *Campania*—Liverpool:

Rubber Import Co.	11,000
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Dec. 3.—By the *Esperanza*—Mexico:

Harburger & Stack	2,000
W. L. Wadleigh	2,000
E. N. Tibbals & Co.	1,000
International Products Co.	1,000
George A. Alden & Co.	1,000
Scholz & Marturet	1,000
For Havre	2,000
Total	10,000

Dec. 5.—By the *Panama*—Colon:

L. Johnson & Co.	5,000
P. V. Rubio & Co.	3,000
Caballero & Blanco	2,500
A. Javanillo & Co.	2,500
G. Amsinck & Co.	1,500
Pablo Calvet & Co.	1,500
A. Held	1,000
Total	17,000

Dec. 5.—By the *Antilles*—New Orleans:

A. T. Morse & Co.	5,500
A. N. Rotholz	5,000

Manhattan Rubber Manufactur	
ing Co.	2,500
Robinson & Co.	1,500
Eggers & Heinlein	1,000
Total	15,500

Dec. 7.—By the *Phanes*—Colombia:

J. Sambrada Co.	4,000
Suzarte & Whitney	2,500
Isaac Brandon & Bros.	2,500
G. Amsinck & Co.	1,000
New York Commercial Co.	3,500
Total	14,500

Dec. 7.—By the *President Grant*—Hamburg:

Ed. Maurer	*55,000
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Dec. 7.—By the *Bayan*—Tampico:

Ed. Maurer	*125,000
New York Commercial Co.	*135,000
Poel & Arnold	*35,000
For Europe	*105,000
Total	*400,000

Dec. 8.—By the *El Rio*—Galveston:

Continental-Mexican Rubber Co.	*150,000
E. S. Churchill	*10,000
Total	*160,000

Dec. 9.—By the *El Valle*—Bahia:

A. D. Hitch & Co.	4,500
J. H. Rossbach & Bros.	3,000
Total	7,500

Dec. 12.—By the *Sequencia*—Tampico:

Ed. Maurer	*100,000
Continental-Mexican Rubber Co.	*75,000
New York Commercial Co.	*70,000
Total	*245,000

Dec. 12.—By the *Allianca*—Colon:

G. Amsinck & Co.	4,000
J. H. Rossbach & Bros.	2,000
Lazard Freres	1,500
R. Fabien & Co.	1,500
A. Rosenthal & Sons	1,000
Total	10,000

Dec. 14.—By the *El Sol*—Galveston:

Continental-Mexican Rubber Co.	*135,000
E. S. Churchill	*15,000
Total	*150,000

Dec. 14.—By the *Prinz August Wilhelm*—Colon:

Delima Cortisoz & Co.	2,000
A. Rosenthal & Sons	1,500
Eggers & Heinlein	1,500
Isaac Brandon & Bros.	1,500
Total	6,500

Dec. 15.—By the *Stavangeren*—Bluefields:

Manhattan Rubber Manufactur	
ing Co.	6,000

Dec. 16.—By the *El Valle*—Galveston:

Continental-Mexican Rubber Co.	*95,000
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Dec. 17.—By the *Colon*—Colon:

H. Mann & Co.	9,000
G. Amsinck & Co.	7,000
Dumarest Bros. & Co.	2,500
Roldan & Van Sickle	2,000
New York Commercial Co.	2,000
L. Johnson & Co.	1,500
P. V. Rubio & Co.	1,000
A. Rosenthal & Sons	1,000
Total	26,000

AFRICAN.

POUNDS.

Nov. 21.—By the *Matea*—Lisbon:

General Rubber Co.	56,000
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Nov. 21.—By the *Carmania*—Liverpool:

George A. Alden & Co.	20,000
Rubber Trading Co.	11,000
Total	31,000

Nov. 21.—By the *Baltic*—Liverpool:

George A. Alden & Co.	30,000
Raw Products Co.	9,000
James T. Johnstone	1,500
Total	40,500

Nov. 22.—By the *Chicago*—Havre:

A. T. Morse & Co.	40,000
Raw Products Co.	5,000
Total	45,000

Nov. 22.—By the *Kroonland*—Antwerp:

Raw Products Co.	8,000
Livesey & Co.	5,500
Total	13,500

Nov. 23.—By the <i>Cleveland</i> =Hamburg:	
Poel & Arnold.....	22,500
George A. Alden & Co.....	22,000
	44,500
Nov. 23.—By the <i>Oceanic</i> =London:	
George A. Alden & Co.....	15,500
Nov. 23.—By the <i>Batavia</i> =Hamburg:	
Wallace L. Gough Co.....	22,500
Rubber Trading Co.....	11,500
A. T. Morse & Co.....	11,500
George A. Alden & Co.....	5,500
For Boston.....	8,000
	59,000
Nov. 23.—By the <i>Mauretania</i> =Liverpool:	
George A. Alden & Co.....	34,000
A. T. Morse & Co.....	25,000
	59,000
Nov. 28.—By the <i>Celtic</i> =Liverpool:	
George A. Alden & Co.....	56,000
Nov. 29.—By the <i>Kaiserin Augusta Victoria</i> =Hamburg:	
Poel & Arnold.....	18,000
General Rubber Co.....	6,000
Raw Products Co.....	5,500
Wallace L. Gough Co.....	4,500
	34,000
Dec. 1.—By the <i>Gothland</i> =Antwerp:	
George A. Alden & Co.....	45,000
A. T. Morse & Co.....	11,500
Poel & Arnold.....	11,000
Robinson & Co.....	8,000
	75,500
Dec. 3.—By the <i>Campania</i> =Liverpool:	
Rubber Trading Co.....	11,000
Poel & Arnold.....	5,500
	16,500
Dec. 5.—By the <i>Cedric</i> =Liverpool:	
A. T. Morse & Co.....	18,000
James T. Johnstone.....	7,000
George A. Alden & Co.....	5,500
	30,500
Dec. 5.—By the <i>Lapland</i> =Antwerp:	
Poel & Arnold.....	30,000
Livesey & Co.....	25,000
A. T. Morse & Co.....	13,500
Joseph Cantor.....	8,000
Robert Badenhop.....	9,000
	85,500
Dec. 7.—By the <i>La Gascogne</i> =Havre:	
A. T. Morse & Co.....	67,000
Livesay & Co.....	22,500
	89,500
Dec. 7.—By the <i>Adriatic</i> =Havre:	
Livesey & Co.....	11,500
Dec. 7.—By the <i>President Grant</i> =Hamburg:	
George A. Alden & Co.....	65,000
A. T. Morse & Co.....	30,000
Wallace L. Gough Co.....	13,500
Rubber Trading Co.....	15,000
Raw Products Co.....	22,500
Poel & Arnold.....	5,500
	151,500
Dec. 12.—By the <i>Caronia</i> =Liverpool:	
George A. Alden & Co.....	40,000
Rubber Trading Co.....	5,000
Poel & Arnold.....	2,000
	47,000
Dec. 12.—By the <i>Philadelphia</i> =London:	
George A. Alden & Co.....	25,000
Dec. 13.—By the <i>Arabic</i> =Liverpool:	
Rubber Trading Co.....	33,000
George A. Alden & Co.....	16,000
A. T. Morse & Co.....	5,000
	54,000
Dec. 15.—By the <i>Samland</i> =Antwerp:	
Wallace L. Gough Co.....	3,500
Poel & Arnold.....	2,500
Raw Products Co.....	2,000
	8,000

EAST INDIAN.

[*Denotes plantation rubber.]

POUNDS.

Nov. 21.—By the <i>St. Louis</i> =London:	
New York Commercial Co.....	*55,000

Nov. 21.—By the <i>St. Patrick</i> =Singapore:	
Ed. Maurer.....	*5,000
Poel & Arnold.....	25,000
Wallace L. Gough Co.....	15,000
Haebler & Co.....	25,000
	70,000
Nov. 21.—By the <i>Masaba</i> =London:	
James T. Johnstone.....	*22,500
Ed. Maurer.....	*13,500
	*36,000
Nov. 21.—By the <i>Kronland</i> =Antwerp:	
A. T. Morse & Co.....	*45,000
Robert Badenhop.....	13,500
	58,500
Nov. 23.—By the <i>Oceanic</i> =London:	
New York Commercial Co.....	*30,000
Poel & Arnold.....	*15,000
Wallace L. Gough Co.....	*4,500
	*49,500
Nov. 23.—By the <i>Mauretania</i> =Liverpool:	
Henderson & Korn.....	*4,500
Nov. 25.—By the <i>Cometa</i> =Colombo:	
New York Commercial Co.....	*85,000
A. T. Morse & Co.....	*35,000
	*120,000
Nov. 26.—By the <i>Minnetaska</i> =London:	
General Rubber Co.....	*90,000
Nov. 28.—By the <i>New York</i> =London:	
Poel & Arnold.....	*15,000
A. T. Morse & Co.....	*11,000
Henderson & Korn.....	*4,500
New York Commercial Co.....	*3,500
	*34,000
Nov. 28.—By the <i>Birkenfels</i> =Colombo:	
A. T. Morse & Co.....	*33,500
New York Commercial Co.....	*27,000
	*60,500
Dec. 1.—By the <i>Gothland</i> =Antwerp:	
A. T. Morse & Co.....	*17,000
Dec. 1.—By the <i>Majestic</i> =London:	
Poel & Arnold.....	*40,000
New York Commercial Co.....	*15,000
	*55,000
Dec. 1.—By the <i>Welsh Prince</i> =Singapore:	
Wallace L. Gough Co.....	11,000
Dec. 2.—By the <i>Walton Hall</i> =Colombo:	
New York Commercial Co.....	*30,000
A. T. Morse & Co.....	*11,500
	*41,500
Dec. 5.—By the <i>Lapland</i> =Antwerp:	
A. T. Morse & Co.....	*75,000
Dec. 5.—By the <i>Minneapolis</i> =London:	
James T. Johnstone.....	*11,500
Ed. Maurer.....	*13,500
	*25,000
Dec. 5.—By the <i>St. Paul</i> =London:	
Poel & Arnold.....	*15,000
New York Commercial Co.....	*14,000
Poel & Arnold.....	25,000
	54,000
Dec. 12.—By the <i>Caronia</i> =Liverpool:	
Henderson & Korn.....	*9,000
Dec. 12.—By the <i>Minnehaha</i> =London:	
General Rubber Co.....	*90,000
Dec. 12.—By the <i>Philadelphia</i> =London:	
Poel & Arnold.....	*4,500
Dec. 12.—By the <i>Matoppo</i> =Colombo:	
New York Commercial Co.....	*55,000
A. T. Morse & Co.....	*25,000
	*80,000
Dec. 16.—By the <i>Teutonic</i> =London:	
New York Commercial Co.....	*45,000
Poel & Arnold.....	*22,500
A. T. Morse & Co.....	*11,500
	*79,000

GUTTA-JELUTONG.

Nov. 21.—By the <i>St. Patrick</i> =Singapore:	
Haebler & Co.....	1,000,000
L. Littlejohn & Co.....	1,000,000
Wallace L. Gough Co.....	225,000
Rubber Import Co.....	170,000
George A. Alden & Co.....	55,000
	2,450,000

POUNDS.

Dec. 1.—By the <i>Welsh Prince</i> =Singapore:	
L. Littlejohn & Co.....	800,000
Haebler & Co.....	700,000
Wallace L. Gough Co.....	350,000
Poel & Arnold.....	225,000
Rubber Import Co.....	150,000
George A. Alden & Co.....	55,000
	2,280,000

GUTTA-PERCHA.

POUNDS.

Nov. 21.—By the <i>St. Patrick</i> =Singapore:	
Ed. Maurer.....	22,500
Nov. 28.—By the <i>Kaiserin Augusta Victoria</i> =Hamburg:	
Robert Soltau & Co.....	8,000
Dec. 1.—By the <i>Welsh Prince</i> =Singapore:	
Haebler & Co.....	22,500
Dec. 3.—By the <i>Campania</i> =Liverpool:	
Earle Brothers.....	5,500
Dec. 7.—By the <i>President Grant</i> =Hamburg:	
Robert Soltau & Co.....	9,000

BALATA.

POUNDS.

J. A. Pauli & Co.....	6,000
Ed. Maurer.....	3,500
De Sola Bros. & Pardo.....	1,500
	10,000
Dec. 6.—By the <i>Marquesa</i> =Funchal:	
J. A. Pauli & Co.....	5,500
R. A. Watson Co.....	1,500
Middleton & Co.....	1,000
Graham, Hinkley & Co.....	1,000
	9,000
Dec. 12.—By the <i>Minnehaha</i> =London:	
Ed. Maurer.....	25,000
Dec. 15.—By the <i>Farima</i> =Demerara:	
American Trading Co.....	5,500

CUSTOM HOUSE STATISTICS.

PORT OF NEW YORK—NOVEMBER.

Imports:	Pounds.	Value.
India-rubber.....	6,114,103	\$5,582,302
Balata.....	63,187	39,612
Gutta-percha.....	134,499	28,300
Gutta-jelutong (Pontianak).....	3,108,117	191,861
Guayule.....	1,073,564	443,206
Total.....	10,493,470	\$6,285,281
Exports:		
India-rubber.....	207,847	\$247,762
Balata.....	2,983	3,096
Gutta-percha.....	1,085	560
Guayule.....	119,522	13,192
Rubber scrap imported.....	1,412,039	\$123,287
Rubber scrap exported.....	234,515	31,050

BOSTON ARRIVALS.

Oct. 7.—By the <i>Ghazee</i> =Singapore:	
State Rubber Co. (East Indian).....	11,500
State Rubber Co. (Jelutong).....	725,000
L. Littlejohn & Co. (Jelutong).....	115,000
Geo. A. Alden & Co. (Jelutong).....	56,000
	907,500
Oct. 12.—By the <i>Zeeland</i> =Liverpool:	
Poel & Arnold (African).....	3,500
Oct. 24.—By the <i>Winifredan</i> =Liverpool:	
George A. Alden & Co. (African).....	5,000
Oct. 28.—By the <i>Kennebec</i> =Singapore:	
State Rubber Co. (East Indian).....	17,000
Haebler & Co. (Jelutong).....	315,000
State Rubber Co. (Jelutong).....	220,000
	552,000

PARA EXPORTS OF INDIA RUBBER, OCTOBER, 1910 (In KILOGRAMS).

NEW YORK.					EUROPE.					TOTAL.	
EXPORTERS.	Fine.	Medium.	Coarse.	Caucho.	TOTAL.	Fine.	Medium.	Coarse.	Caucho.	TOTAL.	TOTAL.
Gruner & Co.....	29,410	2,720	51,510	376	84,016	94,592	7,998	20,269	.....	122,859	206,875
Scholz, Hartje & Co.....	20,356	1,658	4,684	330	27,028	22,440	850	.....	.....	23,290	50,318
E. Pinto Alves & Co.....	218,790	107	107,005	127	326,029	38,835	1,172	264	19,140	59,411	385,440
J. Marques.....	.....	.....	.....	.....	.....	98,600	8,500	33,990	.....	141,090	141,090
Adelbert H. Alden, Ltd.....	55,973	4,765	18,217	547	79,502	.....	.....	.....	.....	.....	79,502
Suarez Hermanos & Co.....	.....	.....	.....	.....	.....	23,772	1,600	3,847	38,596	67,815	67,815
R. O. Ahlers & Co.....	2,223	.....	.....	9,323	11,546	30,753	.....	3,957	2,039	36,749	48,295
Pires Teixeira & Co.....	.....	.....	.....	.....	.....	7,140	.....	4,290	.....	11,430	11,430
Sundries.....	16,660	3,740	14,390	.....	34,790	5,270	680	8,910	.....	14,860	49,650
Itacoatiara direct.....	1,249	122	1,088	64	2,523	2,901	.....	1,761	.....	4,662	7,185
Manaos direct.....	360,722	83,124	84,236	44,350	572,432	383,734	60,991	44,442	44,129	533,296	1,105,728
Iquitos direct.....	12,209	585	6,664	.....	19,458	237,144	7,702	69,564	115,176	429,586	449,044
Total, October, 1910.....	717,592	96,821	287,794	55,117	1,157,324	945,181	89,493	191,294	219,080	1,445,048	2,602,372
Total, September, 1910.....	541,146	72,771	330,839	96,081	1,040,837	430,389	83,973	66,304	225,445	806,111	1,846,948
Total, August, 1910.....	412,669	72,026	316,228	95,408	896,331	566,371	60,911	79,674	349,635	1,056,591	1,952,922
Total, July, 1910.....	221,719	30,220	268,507	181,195	701,641	480,197	54,589	164,570	380,247	1,079,603	1,781,244



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Plantation Rubber from the Far East.

EXPORTS OF CEYLON GROWN RUBBER.

[From January 1 to November 7, 1909 and 1910. Compiled by the Ceylon Chamber of Commerce.]

	1909.	1910.
To Great Britain.....pounds	643,804	1,261,117
To United States.....	359,162	1,213,500
To Canada.....		1,911
To Belgium.....	31,018	39,993
To Germany.....	18,753	12,184
To Australia.....	8,893	4,604
To Italy.....	608	841
To Japan.....		448
To France.....	1,639	....
To China.....	1,508	....
Total.....	1,065,385	2,534,598

[Same period 1908—616,948 pounds; same 1907—413,031.]

EXPORTS FROM THE FEDERATED MALAY STATES.

[For the first nine months of 1910. Reported by the Commissioner of Trade and Customs.]

	Pounds.
Perak.....	1,649,269
Selangor.....	5,730,328
Negri Sembilan.....	956,804
Pahang.....	3,359
Total, to September 30, 1910.....	8,339,760
Total, 9 months, 1909.....	4,050,282

TOTAL EXPORTS FROM MALAYA.

[From January 1 to dates named. Reported by Barlow & Co., Singapore. These figures include the production of the Federated Malay States, but not of Ceylon.]

FROM—	1908.	1909.	1910.
Singapore (to Nov. 4).....pounds	1,672,116	2,068,008	2,980,439
Penang (to Oct. 15).....	1,114,790	1,810,013	1,826,149
Port Swettenham (to Oct. 13).....	.....	.....	6,500,709
Total.....	2,786,906	3,878,021	11,307,297

Antwerp.

RUBBER ARRIVALS FROM THE CONGO.

NOVEMBER 26.—By the steamer *Mandingo*:

	1910.	1909.	1908.	1907.	1906.
Bunge & Co.....(Société Générale Africaine) kilos	77,500	.....	.....	.....	.....
Do.....(Chemins de fer Grands Lacs)	3,700	.....	.....	.....	.....
Do.....(Comite Special Katanga)	7,400	.....	.....	.....	.....
Do.....(Comptoir Commercial Congolais)	20,300	.....	.....	.....	.....
Do.....(Société Anversoise)	370	.....	.....	.....	.....
Do.....(Cie. du Kasai)	64,700	.....	.....	.....	.....
Société Coloniale Anversoise.....(Belge du Haut Congo)	2,800	.....	.....	.....	.....
Do.....(Plantation Lacout)	430	.....	.....	.....	.....
L. & W. Van de Velde.....	3,000	.....	.....	.....	.....
Willart Frères.....	1,500	.....	.....	.....	.....
Cassart & Henrion.....	100	181,600	.....	.....	.....

RUBBER STATISTICS FOR SEPTEMBER.

DETAILS.	1910.	1909.	1908.	1907.	1906.
Stocks, August 31.....kilos	536,560	244,851	874,514	740,514	686,867
Arrivals in September.....	271,042	408,469	189,424	562,889	318,778
Congo sorts.....	211,578	334,265	142,743	490,090	259,072
Other sorts.....	59,464	74,204	46,681	72,799	59,706
Aggregating.....	807,602	653,320	1,063,938	1,303,403	1,005,645
Sales in September.....	226,694	255,866	409,777	584,398	438,962
Stocks, September 30.....	580,908	397,454	654,161	719,005	566,683
Arrivals since Jan. 1.....	3,029,395	3,571,153	3,663,163	4,064,354	4,252,505
Congo sorts.....	2,350,698	2,659,293	3,095,954	3,476,334	3,257,915
Other sorts.....	678,697	911,860	567,209	588,020	994,590
Sales since Jan. 1.....	2,989,997	3,769,434	4,015,896	4,003,533	4,421,009

Rubber Receipts at Manaos.

DURING October and four months of the crop season, for three years (courtesy of Messrs. Scholz & Co.):

	OCTOBER.			JULY-OCTOBER.		
FROM—	1910.	1909.	1908.	1910.	1909.	1908.
Rio Purús-Acre.....tons	1,440	624	1,113	2,710	1,896	2,515
Rio Madeira.....	290	586	304	944	1,328	1,175
Rio Juruá.....	128	324	180	432	619	598
Rio Javary-Iquitos.....	497	707	383	769	1,034	896
Rio Solimões.....	206	100	152	401	240	253
Rio Negro.....	1	10	6	1	14	6
Total.....	2,562	2,351	2,138	5,257	5,131	5,443
Caucho.....	356	415	214	874	1,176	846
Total.....	2,918	2,766	2,352	6,131	6,307	6,289
For Shipment from						
Manaos.....	2,054	2,190	1,632	4,772	5,261	4,893
Pará.....	864	576	720	1,359	1,046	1,396
Total.....	2,918	2,766	2,352	6,131	6,307	6,289

Liverpool.

WILLIAM WRIGHT & Co., report [December 1]:

Fine Pará.—The market has been steady and subject to less violent fluctuations, prices have in the main advanced 5d. to 6d. per pound, closing steady at the advance. A fair trade has been done with manufacturers, but America still continues to buy sparingly, prices now seem to be on a safe level, and any American demand would result in an advance. Sellers are still chary of offering for delivery. Closing values.—Upriver, 6s. 3d. [= \$1.54]; Island, 5s. 6½d. [= \$1.35]. The Brazil receipts are considerably less than last year, up to date there is a shortage in the crop (including caucho) of 500 tons. Receipts for the month are 3,790 tons, including 260 tons caucho, against 3,170 tons last month, and 4,640 tons last year, bringing the crop up to date to 13,140 tons, against 13,200 tons last season.

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INDIA RUBBER WORLD

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 HEVEA BRASILIENSIS

GUTTA-PERCHA
 DICHOPSS GUTTA

Edited by HENRY C. PEARSON—Offices, No. 15 West 38th Street, NEW YORK.

Vol. XLIII. No. 5.

FEBRUARY 1, 1911.

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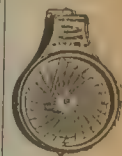
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TWELFTH ANNUAL BANQUET OF THE RUBBER CLUB OF AMERICA

AT THE PLAZA HOTEL, NEW YORK, JANUARY 11, 1911

PHOTOGRAPHED BY THE NEW YORK TIMES



Published on the 1st of each Month by

THE INDIA RUBBER PUBLISHING CO.,

No. 15 West 38th Street, New York.

CABLE ADDRESS: IRWORLD, NEW YORK.

HENRY C. PEARSON,
EDITOR.HAWTHORNE HILL,
ASSOCIATE.

Vol. 43. FEBRUARY 1, 1911. No. 5.

SUBSCRIPTIONS: \$3.00 per year, \$1.75 for six months, postpaid, for the United States and dependencies and Mexico. To the Dominion of Canada and all other countries, \$3.50 (or equivalent funds) per year, postpaid.

ADVERTISING: Rates will be made known on application.

REMITTANCES: Should always be made by bank or draft, Postoffice or Express money orders on New York, payable to THE INDIA RUBBER PUBLISHING COMPANY. Remittances for foreign subscriptions should be sent by International Postal Order, payable as above.

DISCONTINUANCES: Yearly orders for subscriptions and advertising are regarded as permanent, and after the first twelve months they will be discontinued only at the request of the subscriber or advertiser. Bills are rendered promptly at the beginning of each period, and thereby our patrons have due notice of continuance.

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THE INDIA RUBBER PUBLISHING CO.

Entered at New York postoffice as mail matter of the second class.

TABLE OF CONTENTS ON LAST PAGE READING MATTER.

THE RUBBER FOOTWEAR TRADE.

RECENT meteorological conditions in this country have not been all that the earnest and ambitious rubber footwear man could ask. The Middle West had the driest January in almost a decade, and in the East the precipitation was not at all satisfactory to the dealer with a generous supply of "Storm King" boots and four-buckle gaiters on hand.

The winter started with a glow of promise, the first half of December pointing to an old-fashioned winter. There was a creditable fall of snow and it was well distributed, and the orders flowed in to the footwear manufacturers in a way that indicated that the trade was far from being in an over-stocked condition; in fact, the quickness of the response to the first display of winter weather proved conclusively that the supplies on hand were exceptionally light. This conclusion seems further to be borne out by the fact that notwithstanding the openness of the weather during the past six months, orders received by the manufacturers are well up to their normal level for this time of the year, and the factories, though not pushed, are at least running on comfortable schedules. But it goes without saying that a vigorous and well-developed snow storm, starting in at Seattle and pro-

DEATH OF MR. HAWTHORNE HILL.

It is with deep sorrow that we announce the sudden death from pneumonia of Mr. Hawthorne Hill, for ten years associate editor of THE INDIA RUBBER WORLD, which occurred in New York, February 2, just as this issue was going to press. Few men in the United States had a more accurate knowledge of the industry this journal represents, or a better conception of its possibilities, than Mr. Hill. Possessing an analytical mind, a tenacious memory, and a brilliant pen he was able to command and hold the attention of the leaders in the rubber field. His intimates knew him as a sympathetic and loyal friend who was ever ready to give the best there was in him to those who were in need. A biographical article dealing with Mr. Hill's career will appear in the March number.

ceeding with proper dispatch and determination on to Eastport, Maine, would be cordially welcomed by the trade.

Of course there is plenty of time yet for winter of the most pronounced type—as some of the older members of the footwear fraternity will prove to you by citing the winter of 1888, which was exceptionally mild and innocuous until well into March, when there came that memorable blizzard that paralyzed three-fourths of the continent and sold every last pair of rubbers from New York to San Francisco.

Here's an interesting problem for the psychologist: The rubber shoe manufacturers report a noticeable demand for high-heeled rubbers for men. This, of course, indicates a masculine affectation of high-heeled leather shoes.

But this demand for high-heeled rubbers does not come from the effete East, so often charged with slavish emulation of continental ways; nor does it come from metropolitan centers, where the average male is assumed to give more heed to personal adornment than is the case with his rural relatives. The demand for the "Military Heel" and other high-heeled rubber styles comes from the heart of the West, from the lesser centers of population and from the more pastoral walks of life, where living is plain and thinking high. Now why is this? Let the psychologist get to work.

CANADIAN RECIPROCITY.

IF Canada was separated from the United States by a few hundred miles of water it is quite likely that a reciprocal trade agreement between the two countries would not be regarded as necessary, or even desirable, for some time to come, but located as they are, shoulder to shoulder, with many commercial inter-

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ests in common it is not surprising that the importance of establishing a closer trade relationship, especially in view of the remarkable development of the natural resources of both countries during the past two years, should of late force itself upon the attention of statesmen on each side of the border. Attempts have been made from time to time to get Congress to adopt a reciprocity agreement that would be fair and equitable to both Canada and the United States, but thus far they have met with indifferent success.

President Taft, who, even his enemies will concede, is a broad-minded and far-seeing executive, realizing that the time has arrived when something should be done to promote our commercial relations with Canada, has presented to Congress for its consideration a reciprocity treaty that is wider in scope and more revolutionary in character than any hitherto brought to the attention of that body.

The agreement, which has been prepared with great care by representatives of both countries after many conferences, provides for the mutual free entrance of live stock, agricultural products, fruits and fish, and for making paper, wood pulp and pulp wood mutually free whenever the Canadian restrictions on exportations of these articles are withdrawn. The treaty arranges also for a concession on agricultural implements of certain classes and on a few kinds of iron and steel products.

Anticipating that the treaty may arouse opposition because of its apparent violation of the protective principle so long maintained by the government, President Taft, in his message accompanying the document, holds that a commercial agreement with Canada "by which we shall have direct access to their supply of natural products without a prohibitory tariff, is not a violation of the protective principle because that principle does not call for a tariff between this country and one whose conditions as to production, population and wages are so like ours, and when our common boundary line of 3,000 miles in itself must make a radical distinction between our commercial treatment of Canada and any other country."

The President contends that if adopted the treaty will cement friendly relations with the Dominion because of the settlement of controversies that have lasted for a century, and will promote good feeling. Moreover it will extend the market for numerous products of the United States and deepen and widen the sources of food supply in contiguous territory, and greatly facilitate the movement.

As was to be expected, the proposed trade agreement has aroused considerable discussion throughout both Canada and the United States. Members of Congress representing the Northwestern States protest against it on the ground that it will seriously infringe upon the barley, flax and cereal interests of that section of the country. Members representing

lumber States both North and South are opposed to some of its provisions on the ground that if adopted their business will be greatly injured.

Shrewd observers at Washington declare that it will be impossible to secure action on the treaty at the present session of Congress because of the pressure of other business and assert that it would not be surprising if an extra session should be called for its consideration. In any event it is not likely that the treaty will be adopted in its present form.

Just what the final effect of the adoption of a reciprocal agreement like the one recommended by President Taft will have upon business is wholly conjectural. The reciprocal feature of the McKinley tariff law, of which so much was expected, did not materially increase our trade with any other country. Brazil buys more rubber goods from other countries than from us although there has been a heavy reduction in duties on imported American products. As for Canada it may be said that while she admits British rubber goods at a very low preferential she keeps on buying large quantities of the products of the United States.

WHY THE TRADE PAPER AD. PULLS.

THE manufacturer or wholesaler who neglects to take advantage of the assistance of a good trade paper in promoting his interests is losing the aid of the most powerful selling force with which the commercial world is acquainted. Advertising has been defined as "salesmanship on paper," and it does not require very much figuring to prove that it is the cheapest way of selling goods yet discovered.

The chief value of the trade paper lies in the fact that it segregates from the great mass of business men those who are specially interested in a particular industry and gives the advertiser an opportunity to present to them directly the message he wishes to deliver. It reaches the very men who need what he wants to sell. No manufacturer, however rich he may be, can afford to send salesmen to call on each one of them individually.

The representative trade paper is regarded as an authority in its field. Its editor is usually a man of commanding ability who possesses an expert knowledge of the business, who watches what is going on in all parts of the world, and who is ever on the alert to protect or promote the interests of his constituents. Through the aid of his correspondents and his staff of experts he keeps his readers informed of every important news event connected with the trade; he presents technical articles dealing with improvements in the processes of manufacture; he analyzes markets and trade conditions and points out their significance; he calls attention to new fields for the exploitation of certain products, and makes valuable suggestions.

Because of its commanding importance the trade paper has a prestige that is of infinite value to the advertiser who uses its columns. Its readers in general look to it for accounts of the latest inventions, for lists of dealers who can furnish them with the most approved machinery, the best raw materials and supplies of various kinds. Hence an advertisement printed in its pages commands attention because it carries with it the implied, if not expressed endorsement of the publishers. It possesses, moreover, a pulling power that is not inherent in the circular, booklet or catalogue.

No up-to-date business man can afford to ignore the paper that covers his own particular field. He depends upon the information it furnishes, whether in the editorial or advertising columns. He knows that the publisher will not knowingly allow any irresponsible or unworthy firm to use its pages to defraud its readers. It is to the credit of the trade paper publishers of the United States that seldom is this confidence betrayed. Editors are only human and are themselves sometimes deceived by advertisers, but when this happens, which is not often, the fraud is soon discovered and made known.

Already the admission of an advertiser to the columns of a trade periodical of high standing has come to be regarded as a distinct honor because of the privilege it gives him to address from ten to fifteen thousand intelligent readers, many of whom may become possible customers.

IT IS INTERESTING, IF NOT IMPORTANT, to know that there is one place where discussion of rubber planting conditions is no longer considered necessary. In Mexico, in Africa, and in the Far East, even on the most advanced plantations, many questions regarding rubber culture are still dealt with as unsettled. We have seen a mention of five rubber plantations in Ceylon, in the same district, all accounted successful, and employing as many different tapping systems, the manager in each case considering his practice the best. But discussion of such points is not welcomed in the Philippine islands. At least the *Manila Daily Bulletin*, in the columns of which several correspondents engaged in a discussion of rubber planting details, peremptorily put a stop to the matter by announcing: "To avoid further controversies these notes will be discontinued." If the planters around Manila cannot agree upon such a simple matter as planting rubber, let them hire a hall and thresh out the question—but not molest the newspaper editors.

WHO CAN SAY THAT THE LAST WORD has been heard in rubber invention, or even in any one single branch of the industry, when the patent offices of every country continue to grind out new issues relating to rubber and its applications? One would have thought that certainly no field existed for a new patent on a rubber eraser, since the original rubber eraser—back 140 years ago, when its use suggested the name "rubber"—was not protected by any patent. But here comes a Californian, with a new-fangled shape for an "eraser tip for pencils" and means for attaching the same, and the United States has granted him a patent on it. Considering how much more complicated is the field of rubber tire invention, it promises to keep patent office examiners busy for a very great while to come.

COLONEL COLT ON THE RUBBER OUTLOOK.

IN an interview in the *New York Journal of Commerce*, Colonel Samuel P. Colt, president of the United States Rubber Co., is quoted as saying that on account of the extreme high prices of crude rubber during part of 1910, manufacturers were obliged to reduce their output, and also to advance the prices of goods. He says that this undoubtedly had an effect on consumption, but as there has not been discovered a substitute for rubber in tires, the influence on this particular line has not been material. With the decline of crude rubber, the industry has been approaching a normal condition. Colonel Colt regards prospects for 1911 as favorable to lower prices for crude rubber than for past two years.

Regarding the rubber footwear trade, which depends more upon the state of the weather than on any other condition, Colonel Colt says: "The prices of boots and shoes were never advanced proportionately to anything like the advance in crude, and owing to the change in conditions of crude, the advance of 12 per cent. that was made on boots and shoes was reduced later. The boot and shoe trade is now in excellent condition. The early winter has so far been exceptionally advantageous to the footwear market. Concurrently with this, stocks throughout the country are light, which would indicate a healthy condition and the possibility of increased orders for next season."

In the opinion of President Colt the year 1911 will witness as large, if not a larger demand for tires, than during any previous year. He regards the extreme high prices for crude rubber as having been due in part to speculation, adding: "The artificial character of the market was emphasized by the remarkable and steady decline that followed." In view of the stocks reported to exist in certain quarters, he thinks that the speculators who manipulated the market for high prices have had a costly experience, much of their holdings today having accumulated at prices high above those now ruling.

QUALITY OF PLANTATION RUBBER.

AT the last annual meeting of the India-Rubber, Gutta-Percha and Telegraph Works Co., Limited, the chairman, in discussing the market for crude rubber during the past year, said:

"We, in common with every other manufacturer of india-rubber goods, view with pleasure the development of india-rubber cultivation, and will continue to give those engaged in it such assistance as lies in our power. The quantity of this rubber which will be eventually produced will be very large, and plantation rubber will form an important feature in the raw rubber market. It is, therefore, to be hoped that those producers who will establish a reputation for the quality of their produce will jealously maintain that reputation so that the confidence which is necessary between buyer and seller may not be unduly disturbed. This care should be all the greater because plantation rubber is not, strictly speaking, a raw product; it is partly manufactured, and therein lies the danger so far as quality is concerned."

* * *

IN commenting on the quality of the plantation rubber coming under his notice, Mr. A. D. Thornton, of the Consolidated Canadian Rubber Co., Limited, writes in *The India-Rubber Journal*: "Please do not think I am writing in a carping spirit. In my opinion the man on the plantation should know what the manufacturer desires, and the latter should not hesitate to express those desires. The manufacturer is forced to obtain certain results. If he cannot obtain them from 'plantation' he must go back to Para. May I suggest that the word 'Para' be not used in connection with plantation rubbers. Let 'plantations' create their own record, let them have their own standing; it should not be necessary to use the word 'Para' to exploit them."

VOLUME OF THE GUAYULE TRADE.

With the statistics now available as to the exact amount of guayule rubber produced or sold, a fair idea can be gained from the statistics of Mexican crude rubber generally. Before the appearance of guayule in commercial quantities, the exports of rubber from Mexico averaged less than 400,000 pounds annually, and it is probable that they do not now exceed 1,000,000 pounds. It may be assumed, therefore, that the figures given below, in excess of 600,000 pounds yearly, relate to guayule:

UNITED STATES IMPORTS OF MEXICAN RUBBER.

	Pounds.	Value.	Average.
Year ended June 30, 1904.....	366,104	\$148,921	40.7 cents.
Year ended June 30, 1905.....	352,690	185,951	52.7 cents.
Year ended June 30, 1906.....	1,705,915	866,283	50.6 cents.
Year ended June 30, 1907.....	7,175,097	2,877,022	40.1 cents.
Year ended June 30, 1908.....	9,269,443	3,888,684	41.9 cents.
Year ended June 30, 1909.....	15,460,365	5,466,904	35.3 cents.
Year ended June 30, 1910.....	23,486,384	10,918,104	46.4 cents.

The United States customs authorities are now reporting total monthly imports of "guayule gum," without respect of origin—though it all comes from Mexico—and, under another heading, the arrivals from Mexico other than guayule. The result, thus far reported, has been as follows, the third column giving the apparent total imports from Mexico:

	Rubber.	Guayule.	Total.
July, 1910.....pounds	102,923	2,254,194	2,357,117
August	62,483	1,885,612	1,948,095
September	28,567	788,931	817,498
October	76,351	2,004,634	2,080,985
November	22,666	1,965,141	1,987,807
Total, 5 months.....	292,990	8,898,512	9,192,502

MEXICAN EXPORTS OF CRUDE RUBBER.

[Official Returns for Years ending June 30.]

To—	1906-07.	1907-08.	1908-09	1909-10.
Germany ...pounds	2,016,230	2,067,872	172,905	266,141
Belgium	33,211	196,084	736,435	856,715
Spain	35,389	46,266	.....	2,693
United States	8,128,380	9,788,962	12,167,767	16,308,453
France	105,787	39,827	109,756	168,832
Great Britain	1,855	230,351	45,874	147,217
Canada .....	.....	783	.....	.....
British Honduras...	114	961	220	130
Panama .....	.....	535	.....	.....
Italy	282	.....	.....	.....
Cuba .....	.....	.....	425	.....
Total	10,321,248	12,372,241	13,233,382	17,750,181

GUAYULE SHRUB.

The exportation of the guayule shrub, to be worked into rubber elsewhere, is increasing at a rapid rate, in spite of the export duty imposed. The figures given for the fiscal year ended June 30, 1910, are as follows, with comparative figures for three preceding years:

To United States	pounds 9,379,605
To Germany	1,182,137
To France	899,089
To Belgium	96,928
To Spain	8,430
To Great Britain	7,124
Total	11,573,313
Total, 1908-09	6,649,416
Total, 1907-08	2,844,325
Total, 1906-07	1,471,226

These figures are surprisingly large in the estimation of leaders in the trade in the United States to whose attention they have been called, while the official return of export values of guayule shrub are so large as to call for official explanation before they can be presented in these pages. A comparison of the Mexican official statement of exports of guayule, compared with the United States statement of imports, suggests that the Mexican customs service may have included under "guayule shrub" a good deal of guayule rubber.

FOREIGN TRADE OF CANADA.

OFFICIAL (unrevised) returns from the department of trade and commerce of Canada for the six months ended September 30—the first half of the fiscal year—for three years past contain the following details regarding the imports and exports of manufactures of india-rubber and gutta-percha; also, the imports of raw rubber and gutta:

IMPORTS OF MANUFACTURES.

	1908.	1909.	1910.
From United States	\$336,670	\$486,301	\$799,977
From Great Britain	81,792	159,109	355,285
From Germany	9,121	18,576	22,322
From Other countries	5,892	7,485	11,719
Total	\$433,475	\$671,471	\$1,189,303

EXPORTS OF MANUFACTURES.

	1908.	1909.	1910.
To United States	\$5,120	\$44,615	\$22,204
To Great Britain	14,257	18,783	28,875
To Australia	19,017	9,321	15,795
To Other countries	55,088	64,164	37,930
Total	\$93,482	\$136,883	\$104,804

IMPORTS OF RAW MATERIAL.

	1908.	1909.	1910.
United States	\$925,446	\$1,521,739	\$1,981,902
Great Britain	9,271	252,172	75,055
Other countries	1,800	5,531	20,816
Total	\$936,517	\$1,779,442	\$2,077,773

THE SEA ISLAND COTTON SITUATION.

JOHN MALLOCH & CO. (Savannah, Georgia) in their last circular for 1910 reported regarding the market for Sea Island cotton for the period immediately preceding: "Sales consisted mostly of a poor style of Fancy at 30 cents. There is decidedly more disposition to sell, but factors have refused bids of a cent under quotations for a fair quantity of cotton. Receipts consist almost entirely of low grades, and the staple of this class of cotton is poorer than we have seen since the crop of 1907-08. The running stock shown by the Cotton Exchange is 20,837 bales, but we do not believe the offering stock of all grades amounts to 4,000 bales. The offerings of Fancy cotton are comparatively nothing, and we fear there is going to be a great scarcity of this grade."

Under date of January 6 the same firm reported: "The market ruled quiet during the week, but with a fairly large unexecuted order in the market for Extra Choice at 28 cents, it looks as if factors would have to come to this price, and business may result in the next few days. Fancy cotton continues exceedingly scarce, and business in this quality can only be done in retail quantity except at much higher prices, which would have to be paid to induce holders to sell. In view of the small demand we are surprised to see how few distress lots are being offered, and it looks to us now as if the market was about bottom."

STATISTICS FOR FOUR SEASONS (BALES).

	1907.	1908.	1909.	1910.
Stocks, September 1.....	709	3,223	2,340	1,897
Receipts	46,526	68,832	73,624	54,844
Total	47,235	72,055	75,964	56,741
Less Exports	33,303	52,991	56,873	28,221
Stocks, Dec. 31.....	13,932	19,064	19,091	28,520

December 31 Quotations for Georgias.

	1907.	1908.	1909.	1910.
Medium .....	.....	.....	.....	.....
Medium fine	15	.....	.....	.....
Fine	16	13	.....	26
Extra fine	17½	14	26	27
Choice	20	14½-15	27-27½	28
Extra choice.....	22½-24	17 -17½	28	29
Fancy	28 -29	18½-19½	29-30	30-31

India-Rubber in Dutch Guiana.

By the Editor of "The India Rubber World."

SECOND LETTER.

Mistaken Ideas Concerning Dutch Guiana.—Paramaribo the Restful.—A City Without Skyscrapers, Electric Cars or Autos.—Our Tiny Tidy Hotel.—So-Called Daily Papers.—The Black Dutch and Characteristic Incidents.—The City's Healthfulness.—A Bush Experience.—Wild Rubber.—Discovery of the "Hevea Guyanensis."—Experiments in Tapping and Coagulation.

FOR some reason Dutch Guiana is little known in the United States and Europe, and in a misty way is believed to be exceedingly hot and unhealthy. It actually is neither. The temperature is very even and varies from 70° to 93° Fahrenheit. It is warm and humid but not unbearably so. In fact this colony, with its area of 129,000 square miles, sandwiched in between French and British Guiana and touching Brazil on the south, is a very desirable bit of the tropics and its 87,000 inhabitants are among the most interesting people in the Americas.

One of the most restful spots in the world is Paramaribo. Its quiet is never disturbed by trolley gong or automobile horn, for of street cars and autos there are none. The shrill barking of importunate cabmen at railroad station or pier is unknown. The half a dozen carriages that are for hire in the city come only on order and the driver sits and sleeps in the sun until his fare is ready. His idea of driving, particularly if he be a young Dutch negro, is a constant jerking of the reins and cracking of the whip. The result is that the horses pursue an uneven fidgety flight, weaving from side to side, often perilously close to the edges of the narrow dyke roads. The cabmen are very honest withal and never attempt to overcharge. They speak English after a fashion, as do most of those with whom one comes in contact there, and if their fare does not have change with which to pay, they suggest "to-morrow I come" and cheerfully depart.

There are no electric lights, but there is a gas plant, the streets being lighted until 10 o'clock when the moon does not shine. The whole city goes to sleep at half-past 9 and begins business at daylight. From 12 to 3 the shops are shut, including the bank and postoffice, and breakfast and midday siesta are decorously observed. The drinking water comes from Heaven and is caught in huge cisterns that adorn every backyard. It is filtered for table use and if the visitor desires, boiled and kept in cool

crocks in unfailing supply. There are also several public wells sunk in a sandy reef that runs through the city, into which the river water filters. They are always full. There are no elevators in the office buildings, no skyscrapers, subways, or elevated roads, and the police are courteous black gentlemen, clad in heavy blue woolen uniforms which they wear with much pride and perspiration.

The streets are macadam, covered with beach sand and are uniformly good. Many of them are very beautiful with their rows of Royal Palms or, like Herrenstraat, shaded by a double row of branching mahogany trees. The shops are good and the only lack in the city is a Carnegie library. In spite of its primitiveness the place is curiously cosmopolitan. Good and bad samples of all nations on the earth are gathered here but not in sufficient number to act as an unwholesome leaven for the sturdy, thrifty Dutch possessors of the land. People call the Dutch slow, but most people simply repeat what some one else has told them. My experience with the Suriname Dutchman leads me to state emphatically that anything he promises is done with a quiet promptness that is beyond praise.

The little hotel at which we stopped fronted on one of the main streets, facing an avenue of royal palms that terminated in Herrenstraat. It was centrally located, very tiny, exceedingly clean and well managed. It was established by an English widow, who died and bequeathed it to a daughter and niece, neither of them over eighteen years old. With the aid of excellent servants they ran the house well and their rate of \$2 a day was certainly most reasonable in view of the wholesome food and service.

The Dutch negroes who live in the settlements speak Dutch with the same curious softening of the harsher syllables that is apparent in the English speech of North American negroes. They call themselves Dutchmen and are dignified, sluggishly industrious, and imitative.

The Suriname Dutch are not only a very courteous people but have a fine sense of humor. They still smile over the American yacht that entered their waters and when the cannon on the little fort bade it stop, replied with a courteous salute



GOVERNMENT SQUARE, PARAMARIBO.

[Palace of the Governor on the Right.]



FOREST PATHWAY WITH YOUNG "HEVEA GUYANENSIS" IN FOREGROUND.

from its own little brass muzzle-loader. Then when a second shot was fired, the yacht dipped its colors in acknowledgment of the extraordinary honor paid by observant officials. According to regulations a third gun, that one shotted, should have been fired point blank at the offender and would have had

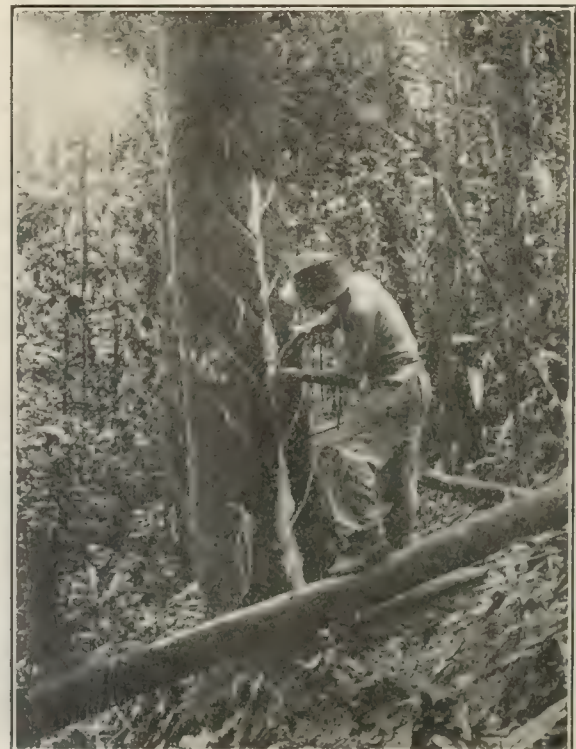
the backing of International Law. But the visitor was an American, good natured and ignorant, and so they good humor-edly let it go up the river and come to anchor without damage.

There are many newspapers in Suriname—so called "daily's"—six of them. I was not able to fathom the exact date of publication as they seemed to vary. As nearly as I could figure it, one came out Monday, none were published Tuesday, two appeared Wednesday, and for the rest of the week they either appeared singly or in bunches, as editorial enterprise directed. I was interviewed by one of the newspaper men, but he certainly misunderstood some of my remarks. It was not my intention to give him the impression that my visit to Dutch Guiana was for the purpose of cornering the rubber and balata market. I had kept that a profound secret, even from myself, and how he discovered it I have no means of knowing. The newspaper story made me very popular, however, and I had many opportunities to purchase bushlands, going-to-be plantations, and gone plantations. One kindly old black Dutchman looked me up very early one morning and after profound apologies deferentially suggested that I loan him money with which to purchase an estate which he would sell back to me at a very satisfactory figure to himself, once the papers were passed. He was perfectly satisfied with my refusal, his reward being in his consciousness of being a man of business and handling large affairs just as a white man would.

The visitor to Paramaribo by steamer may have twenty-four hours in the city, if he so elect. The steamer makes a landing in the morning at the company's pier, where it discharges passengers and cargo. That afternoon or evening, at the captain's pleasure, it drops down stream to Nieuw Amsterdam to meet the banana barges, getting away the following afternoon about four. Passengers who wish to stay over one night in the city may join the steamer by private launch or by the mail boat that leaves at 2 o'clock. I am writing this in detail as no one on the Dutch boats seems to know this, or, at least, no two know it alike, and it sometimes makes a difference in one's planning if one knows whether a boat stops twenty-four minutes or twenty-four hours.



"HEVEA GUYANENSIS" WITH RAIN GUARD OVER TAPPED SURFACE.



HERRING BONE TAPPING, "HEVEA GUYANENSIS."



FRUIT SELLER.

by the way, was a black man, and they are the severest of all government officials. Arriving at the settlement, he called on the people, and announced to them that he was about to evict them, and by force if necessary. They agreed that it was only just and proper, and sat and smoked and watched him with great respect. His dignity would not allow him to handle their effects himself, and he therefore decided to remove the shingles from their roofs so that they would no longer be habitable. After some bargaining the debtors began to remove the shingles for him, he paying them two florins each in advance. By mid-afternoon the roofs were stripped, the shingles neatly piled by the roadside, the laborers paid and the official had departed for town. As soon as he had gone, the homeless ones calmly nailed them on again, and contentedly awaited another profitable eviction.

One of my friends in Paramaribo wanted a trench dug, and bargained with an honest Dutch negro to do the job for a certain number of florins. The price being agreed upon, the negro demanded one-half his pay in advance (as is customary), which was readily granted. Then he started off to get his shovel, and, as it was Friday afternoon and rather late to begin on a new job, he did not return. The next day being Saturday, and as he had money in his pocket, he could not be expected to work, and therefore didn't. The day after being Sunday he could not work without outraging his own and his neighbors' religious principles. On Monday he came around to inform his employer that he

The good humored inertness of the black Dutch is constantly making itself felt, and the most casual observer cannot fail to note it. For instance, a colony of black Dutch lived in houses belonging to a planter, and paid no rent. They did not refuse to pay, not at all. Every time they saw the owner they not only acknowledged their debt, but took pains to hunt him up to assure him that they had not forgotten the obligation, and, incidentally, to borrow a little more for present needs. He finally put the matter in the hands of a sheriff, telling him to evict them at once, and the official departed, determined to do his duty at whatever cost. He,



WITCH BROOM.

couldn't work the day after a holy-day (another custom), but that the trench would be begun Tuesday morning, and it was, and finished in due time.

There were but few mosquitos in Paramaribo while we were there, but in certain parts of the bush they are very plentiful, and malarial fevers are the result. They even tell a story of a Dutch sailor up in the bush committing suicide because the mosquitos tormented him so. While the colony is uniformly healthy, and Paramaribo, for a tropical city, wonderfully so, it has its share of diseases. The excellent city hospital has 600 to 700 patients, and the study of *elephantiasis* and the hookworm disease is constant and thorough.

I am more and more impressed with the conviction that a man can go almost anywhere in the tropics and continue in good health if he is careful about a few essentials. I have a friend, a case hardened, experienced tropical adventurer, who took an American mining engineer up into the Guiana bush. They both got fever very badly, and the engineer in his delirium came very near killing his companion. I went all over the same ground without a touch of illness. Meeting the adventurer later, I resolved to discover, if possible, the reason for their suffering. A very little questioning developed the fact that they carried no mosquito bars, and that they drank unboiled bush water when they were thirsty. In other words, they did not take ordinary proved precautions, and they got what they deserved.



HARBOR VIEW, PARAMARIBO.



CARRYING A REJECTED BUNCH HOME.

One day I had a call from the Government Inspector of bananas, who is not only an enthusiastic planter of *Hevea* rubber, but, being the father of the Government Forester, knows much about the wild *Hevea*, the *Guyanensis*, that is quite plentiful in the hinterland. He had many samples of rubber collected from this tree, and also much information concerning it.

The presence of the *Hevea Guyanensis* has long been known, for it was identified as far back as 1762, by Aublet. Very little attention was paid to it until in 1906, when the man who was my visitor found twenty or more large trees in the gold fields near Hoolhoven placer. He at once had them tapped and the rubber examined. It was found to be short of fiber and rather sticky, although the *caoutchouc* content was large, 88 to 94 per cent.

To the casual observer the tree would appear to be the same as the *Brasiliensis*. The leaves, however, are much smaller, and the leaf ends more rounded with a short point, the nuts are smaller also. An examination of the blossom, however, will absolutely identify the tree. The tree is called by the Carib Indian "mapalapa," and the women use the dried seeds for ornaments. The trees begin to bud in September and flower up to

December. As far as has been observed the tree grows slower than the *Brasiliensis*. It is not very plentiful, as a rule, and is oftentimes found in swampy places.

The Government Forester started men out to "cruise" for trees, and in one section located 1,120 of them. The year following, 1910, he discovered something like 1,000 more. The cost of locating the trees was something like 26 cents per tree. Under government supervision, he started tapping them after the most approved methods. The herring-bone system was generally employed—and coagulation effected by the use of acetic acid. The trees were tapped every two or three days, one man tapping from 60 to 80 of them. The average production per tree was from 10 to 15 grams, or .35 to .53 ounce. The latex varied considerably, containing 27 to 54 per cent. of rubber. Of 500 trees tapped the yield was 80 kilos or 176.4 pounds of dry fine, or 160 grams, equal to 5.64 ounces per tree.

Of three analyses of this rubber made in Holland, one chemist found nearly 9 per cent of resin, another a little over 3 per cent, and the third something over 2 per cent. Opinions as to its value varied. One firm of European rubber importers called it

very poor; another declared that it was the equal of Para rubber, except that it was not quite as strong. Rubber manufacturers in Holland reported favorably on it, while German manufacturers did not think so much of it. Carefully analyzing all the reports the Government Forester came to the conclusion that the market value was about the same as Ceylon plantation rubber. Later experiments developed difficulties in coagulating. One attempt to overcome this was by adding vinegar to the latex and then boiling it. The result was a very spongy rubber mass.

Whether the trees show wound response in the same degree as do the *Hevea Brasiliensis* has not yet been established. They certainly do show wound response, but after a time the flow seems to diminish. Smoking the rubber was also attempted, "maripa" and "paramaka" nuts being used to produce the smoke. Rubber thus coagulated showed little nerve. Treating the latex with smoke from green wood produced a better result.

The forest was cut away in many places around the mature trees, and a great many seedlings sprang up, which appeared to be growing very nicely, although not very rapidly. The government has also cleared strips two meters wide in various parts of the forest, and sowed seeds of the *Guyanensis* in these partial openings, the idea being to keep the rankest growth down, and give the young trees a chance.

[TO BE CONTINUED.]



TAPPING A WILD *HEVEA GUYANENSIS*.

THE new Madeira--Mamoré Railway, in Brazil, has arrived at the stage of maintaining a regulation time table, which is printed in the local newspaper very much in the style of such information in newspapers elsewhere. The latest issue of this time table relates to running the trains from Porto Velho, the starting point, up to 152 kilometers.

The India-Rubber Trade in Great Britain.

By Our Regular Correspondent.

I DO not remember a previous occasion when a raw rubber has had an original paper to itself in the proceedings of the Society of Chemical Industry, and I have read with interest in its *Journal* of November 30 the paper on Guayule Rubber read by Mr. Harold Van der Linde at the Canadian section, of which

GUAYULE RUBBER.

he is a past president. The paper naturally consisted of a general resumé of the industry as now existent, rather than a dissertation upon the present and the future of the Inter-continental Rubber Co., with which important concern the author is now associated. The interesting statement was made that though the crude rubber compares with other soft and resinous brands, after vulcanization its value is much enhanced, and that it can then compete with high grade non-resinous rubbers. This change after vulcanization differentiates it from other resinous rubbers, which do not appreciate to the same extent by vulcanization. I have not given the author's exact words, but rather what I gather he intended to convey. He prophesies that this special advantage of guayule will be testified to in the higher price obtained in the future. This is not the only point of interest as regards the future; the main consideration would seem to be whether the industry will have any future. I am not attempting myself to set foot on this holy ground of contention, but there are men of position who aver that the industry will die out four or five years hence from want of raw material. Mr. van der Linde is certainly not among the pessimists, as although he says that not much is known as to the growth of the shrub or the age at which it arrives at maturity, there will be raw material for many years obtainable from the ordinary re-growth. It is somewhat surprising to read that about 20 per cent. of the world's total output of rubber in 1910 was derived from the guayule shrub.

THE most recent statistics of the Canadian rubber trade in regard to imports of rubber goods testify to the increasingly strong

PROOFING TRADE WITH CANADA.

position held by Great Britain with regard to waterproof cloth and clothing, the value being $4\frac{1}{2}$ times that from the United States, other countries contributing merely a trifling amount. These statistics are ten months old, but inquiries in the trade show that this business continues brisk, so we may look to much the same if indeed not a better result in the forthcoming returns. One can quite understand that the conditions of life of such a large number of the inhabitants of the country districts render a good waterproof coat a matter of necessity. The formerly large business done in carriage aprons has, I am told, suffered a good deal in recent years, owing to the automobile. The carriage apron of mackintosh cloth was a more or less ornate and expensive article, easily damaged by oil, and it is not in favor with the motorist. The late autumn is a busy time with proofers on this side who have important Canadian connections—firms, for instance, such as P. Frankenstein & Sons, of Manchester—as the pattern books for the forthcoming spring trade have to be got out. This season also sees Canadians who have come over to buy cloth and make arrangements with proofers to finish it and deliver in January or February. The statistics do not distinguish between finished clothing and proofed cloth in the roll, and I am not in a position to do any accurate dissection. As a general rule, however, it may be said that the lower-grade material goes out in the form of clothing and the higher as proofed cloth. The duty on the cloth is, I think, 20 per cent., and on the clothing 35 per cent., and though there is really not very much in it it is found that the purchaser of a cheap coat does not notice the impost as much as the buyer

of the higher grade does. With regard to prices, although there is now in existence a Waterproof Garment Manufacturers' Association, this has had more to do with the regulation of the wages to be paid the operators, etc., for certain classes of work, than with fixing sale prices. Certainly earlier in the year two notices were sent out regarding rises in price, but no notice of reduction of a like official nature has transpired since fine Pará fell to the 6 shilling level.

THIS property, which is situated in Rose street, West Gorton, Manchester, was put up for sale by auction on December 6.

STANDARD RUBBER WORKS.

The first bid was £500, which was raised to £1,550, at which it was withdrawn, as being considerably under the reserve price. The land and buildings without the machinery and fittings were then offered, but no bid was forthcoming. If not sold shortly by private treaty, the property will be offered piecemeal. The Standard Works are the property of Messrs. George Littlewood & Sons, Limited, now in voluntary liquidation, and the sale was by instruction of the liquidator, a Birmingham official. Messrs. Littlewood are a well-known Birmingham firm of wheel makers, especially for perambulators, and the business carried on at the Standard Rubber Works has been mainly in connection with perambulator tires, though rubber heel pads have been an important product in recent years. The freehold land was comprised in the sale and most of the rubber machinery on offer was of modern installation and by well-known makers.

THIS company, which commenced manufacturing about two years ago, is located at Cambridge street, Broadford road, Manchester.

THE REVOLITE CO., LIMITED.

This Cambridge street, I may say, is at a considerable distance from Cambridge street, Hulme, Manchester, where the works of Messrs. Charles Macintosh & Co., Limited, are situated. The main business of the Revolite company is in rubber heels, though sundry other molded articles are also turned out. Considering the great competition there is nowadays in this rubber heel business, both from small and large rubber works, it says something for the wearing capacity of the Revolite "Harrier" heel that it has been found necessary to considerably enlarge the capacity of the works to keep abreast of the demand.

ALTHOUGH three or four reforming patents have been at work during the year, the demand for scrap rubber has not been such

RUBBER SCRAP.

as to cause any definite rise in price, nor can it be said that the dealers have experienced any difficulty in getting supplies from customary sources, owing to the consumers sending their scrap direct to the reforming works. Perhaps this may be due to the delay in turning out untold tons of reformed rubber per week, an eventuality we were led to expect a year ago. The scrap rubber market never shows any close sympathy with the raw rubber market in the matter of prices, and the variations in the prices of various qualities during 1910 were nothing like so pronounced as in the case of raw rubber; indeed, the fluctuations were within comparatively narrow limits. This occasioned surprise to those having old rubber to sell. Motorists in particular seemed to think that there was a good business to be done in disregarding tires at prices approximating to the shillings per pound which they saw in the paper was the value of crude rubber. As soon, however, as a deal was commenced disillusion quickly followed. The price of old automobile tires at New York, as quoted in THE INDIA RUBBER WORLD of November 1, is 8 cents per pound, or about £36 per metric ton. This is for car-

load lots. In England for ton rate the price would be about 7 cents per pound, or £30 5s. per long ton. Now, the average motorist only has a few tires to dispose of at a time, and anyone who undertakes the collection of the 130 to 150 tires which go to the ton is not in a position to pay more than a shilling or two for each tire. Frequently when these few shillings are offered no deal is effected, as the tire owner thinks he is being cheated. Still, however, the collection is brought about, and whatever the profit may be the bulk of the tires eventually find their way to reclaiming works, such as the North Western, where I have seen a huge heap of them.

I AM frequently asked the question, "What is the address of your paper?" and since the move some years ago to the danger-

THE CHANGE OF ADDRESS.

ous-looking skyscraper in Broadway, I have accustomed myself to answer straight away. I could never feel certain

off-hand about the previous address, and now we have got to something even worse to carry in the mind. I often wonder whether New Yorkers remember their own addresses, and whether cabmen are expected to carry them in their heads after leaving the railway station or the club. I am not going to attempt any such thing, and by way of being always ready with an answer I have written THE INDIA RUBBER WORLD's new address plainly on some pieces of cardboard, one of which is put in each suit of clothes.

RUBBER CONDITIONS IN PERU.

THE government of Peru is seeking by a liberal policy to encourage the cultivation of rubber trees. A law has been approved under which the government will pay a premium equivalent to about 1 shilling for each rubber tree grown on a plantation when it has reached the age of 3 years. It is asserted that under the favorable conditions which exist throughout the Peruvian *montaña*, capital carefully invested in rubber planting there has practically a government guarantee of repayment at the end of three or four years, while the investor would have his plantation as clear profit.

Commander Olivara, an officer in the Peruvian navy, has been intrusted by his government with the work of inspecting the rubber lands on the *montaña*, and he encourages the investment of foreign capital in rubber enterprises. Thus far, however, little foreign capital has been so employed. It is stated that all the companies which are now engaged in exploiting rubber lands in the republic have made substantial profits.

There remains, however, the difficulty of transporting the rubber, when collected, to the Peruvian ports on the Pacific—and it is a long way to seaboard by way of the Amazon. Although the distance which divides the Pacific coast from the *montaña* is comparatively short (about 200 miles), its great difficulty, from an engineering point of view, arises from the necessity of crossing the Andes. But the government already, says *The Financial News* (London), has signed a contract for extending the railway now extending into the interior from the port of Callao, with the intention of making connection with the river Ucayali, one of the streams which helps to form the Amazon. Such a line would put the Pacific coast in close touch with the Peruvian system of waterways on the other side of the Andes, and thus enable Peru to retain the great part of her rubber trade in her own territory.

PROFITS IN WASTE RUBBER.

IN their annual review of the waste rubber market Theodore Hofeller & Co., of Buffalo, New York [*Boston Commercial Bulletin*, January 7] comment:

"Our faith in the future of the old material business does not blind us to the fact that there are some conditions which are not right. Nearly every line of business eventually discards

something which must find its way to the dealer in old materials, and as the volume of all other lines of business in the world expands, the business in old materials increases accordingly. If this inference is correct, it must follow that the old material which finds its way to market must each year be constantly increasing. Because of the usual abundance of old material, the dealer in these goods is generally satisfied with the volume of business, but he often complains, and with reason, that his margin of profit is too small. He usually obtains full market price when he sells, but the trouble appears to be that in his eagerness to buy, his buying price is too close to the selling price to leave a reasonable profit.

"We do not know whether a campaign of education is possible along these lines, but comment can do no harm and may be productive of some good. We believe that in France, Germany and England, dealers in our line of business are more conservative and have in mind volume of profit rather than volume of business. We are decidedly opposed to unlawful combinations in restraint of trade, but we do believe in intelligent competition that has the courage to let someone else have the business if it does not yield a fair return on the investment.

"We believe there is plenty of old material in this big world of ours to satisfy everyone. What say you fellow dealers? Would we not all be more contented if we were less keen on the volume of our business and more keen on a reasonable margin of profit? We believe that the future stability of the business rests upon this point."

GUTTA-PERCHA GOODS PRICES.

[FROM "GUMMI-ZEITUNG," BERLIN.]

BY gutta-percha goods manufacturing circles our attention is directed to an error that frequently occurs among customers. It is supposed by some that rubber goods and gutta-percha articles are made from the same raw material, or that gutta-percha is only a variety of raw rubber. The consequence is constantly repeated enquiries as to why the selling prices of gutta-percha goods are not reduced in harmony with the lower quotations for raw rubber. In regard to this, the trade should be distinctly informed that raw rubber and raw gutta-percha are two completely different materials, and that the markets for these two raw materials are in every respect entirely independent of each other. While the speculative operations of the spring of 1910, in the course of which the asking price for raw gutta-percha increased to the extent of about 300 per cent. of the normal price, have fortunately ceased, the quotations, particularly of the medium and lower grades of raw gutta-percha, are still so high that a reduction in the present selling price is entirely outside of the realms of possibility. With the prevailing very large demand and the exceedingly scant supply, all the conditions for a cheapening of gutta-percha, within a visible period, are absent; the prices show rather a decided tendency towards a further increase. In any event, the situation of raw rubber cannot in any respect be connected with that of gutta-percha, and all such references are based on error. Gutta-percha prices are established quite independently: according to the present situation a reduction in these goods is even less likely than in rubber.

THE GENERAL TENDENCY TOWARD SPECIALIZATION is illustrated by our London contemporary, in dropping from its title several words long familiar there, leaving only *The India-Rubber Journal* to denote the field of the publication. Our own paper for ten years appeared under the heading INDIA RUBBER WORLD AND ELECTRICAL TRADES REVIEW. With the advance of time, however, the rubber interest has expanded to such an extent as to claim the undivided attention of the journals devoted to it, leaving the expansive electrical field to other specialized periodicals.

Tires at the 1911 Madison Square Garden Show.

IT is safe to assume that all new ideas and developments in motor vehicle tires and rims were exhibited at the eleventh annual automobile show in Madison Square Garden, New York City, which was held from January 7 to 21. It has become customary for the manufacturers of tires and rims, as well as those who produce the automobiles themselves, to wait for this annual show before announcing and displaying their latest improvements and departures from former models. With the show over, nothing radically new need be expected until show time comes around again.

This is, consequently, a most opportune and logical time to study the present development of the rubber tire for motor vehicles and its rim. The permanency of the rubber tire for automobiles is unquestioned. There has been no little discussion of the possible use of steel tires, and these have gained a foothold in Europe, where they are fitted to heavy motor trucks. This is due largely to the stand taken by the French government, which grants subsidies only to trucks so equipped. As yet the steel tire has not appeared in this country for use on motor vehicles, and if it does its use is certain to be limited to the heaviest motor trucks, the speed of which would therefore be limited to about eight miles an hour. With this permanency of the rubber tire for motor vehicles assured, the industry has continued its rapid growth. New companies have entered the field, and the old companies have increased their manufacturing facilities. There are now ninety-four concerns listed as being engaged in the manufacture of motor vehicle tires, and fifty-three who are producing rims. Thirty-five are listed as making inner tubes, quite a few of which are included in the ninety-four making tires.

A careful study of the pneumatic tires exhibited at the recent show in New York did not reveal very much that is new. The chief principles necessarily are alike and unchanging, and shapes and sizes have become practically standardized. Tires now differ mainly in respect to quality, that is, in respect to the materials and methods used in their manufacture. The amount of rubber and of fabric employed, and the thickness of treads and side walls are the principal points of difference observable by the semi-critical eye. The only real way to distinguish between the various makes is by the non-skid treads. Each particular make has a tread pattern of its own, and these differ radically. They are as different, for instance, as the prominently protruding and irregularly arranged knobs of the Morgan and Wright anti-skid tire, and the cup-like depressions in the Pennsylvania vacuum tread, or the multitude of rubber surfaces of the Ajax to the steel studs of the Michelin. The Diamond tread has a steel studded diamond shaped grip, and the Firestone company continues its design with the name "Firestone" raised from the tread and repeated diagonally around the center contact surface. The Goodyear No-Rim-Cut has a surface of diamond-shaped blocks, the sharp edges of which grip the ground, and the base of each block is larger than the top to prevent the pulling off of the blocks, the Goodrich steel studs, the Empire a raised checker tread, and the Continental a traction tread, which is an all-rubber non-skid, with four rows of longitudinal projections, the alternate rows being opposite each other, high in the center and tapering at either end to a line even with the surface of the tire. Other non-skid designs shown were the Fiske, Rutherford, Goodrich, Batavia, Jelco, Stein, D. C., Star, Miller, Prince, and Thermoid.

The only innovation in tubes is the Marsh trussed inner tube, a new production from Detroit. This tube resembles a large curled caterpillar, the trusses being not unlike accordion pleatings which, under the influence of inflation, are pressed tightly together, and thus present much greater resistance to punctures. This tube is not claimed to be puncture proof, but to be non-

leakable in the event of a puncture. The theory of this is that if one or more of the trusses is punctured, the hole will be immediately closed by edgewise compression.

In the development of tires for commercial motor vehicles there has been marked progress. This progress includes the advent of twin pneumatic tires for use on motor delivery wagons and light trucks, an increase in the number of companies making solid tires of the wireless type, and the introduction of demountable rims for use with solid tires, both single and dual. Twin pneumatic tires were shown by the Fiske and Michelin companies, and both advocate their use on large limousine cars as well as on light commercial vehicles. In fact, Michelin twin pneumatics were fitted to the rear wheels of one large limousine exhibited at the recent Importers Salon in New York. Large size single pneumatic tires have been successfully used on motor trucks up to one ton capacity, and this makes it safe to presume that twin pneumatics can be successfully used on two-ton vehicles. Their use permits a much greater speed than is possible with solid tires, and high speed is the important factor in a good many uses to which commercial motor vehicles are put. Both the Fiske and Michelin twin pneumatic are provided with quick demountable rims.

Firestone and Hartford are the two companies which have already placed demountable rims for solid tires on the market. The Firestone device comprises essentially a clamping flange and a retaining ring, the latter held in place by 14 nuts and bolts; when the nuts are removed the flange and, of course, the retaining ring are released, and rim and tire both may be removed and replaced by a spare rim and tire which it is assumed are carried for the purpose, and which are put on by merely reversing the operation. The Hartford demountable employs the principle of the wedge ring, provision against irregularities in wheel and band diameters being made by splitting it and allowing for clearances to permit of positive seating of wedges and to prevent springing of the rims while in use on heavy trucks. The beveled inner surface of the rim corresponds with the taper of the wedges, which latter are held in place by eight small lugs, secured by bolts passing through holes in the rim. A double wedge ring is placed in the center of the felloe band to form the inner seat for each of the individual rims where twin tires are used. The rim is designed for use with either single or twin tires, and may be applied to any wheel fitted for the standard types of side-flanged or side-wire tires. At least two other well known tire companies, the Continental and Morgan & Wright, are working on demountable rims for solid tires, and are likely to place them on the market in the near future.

In addition to the rubber block tire made by the Kelly-Springfield Company, there were shown, as usual, several cushion or semi-solid tires. The Swinehart and the Motz were the best known of these, in which the design of the central core is the essential feature. One of the new developments in this class is the United States tire. In shape it is frustum pyramid, the flattened apex of which is indented. The hollowed core also is of pyramid shape, and the base of the tire is split to increase the resiliency, which, of course, is claimed to rival that of pneumatic tires. Another is the Goodyear-Motz, made by the Goodyear Tire and Rubber Company. This tire is intended primarily for use on electric automobiles. By an ingenious combination of slantwise webbings, undercut sides and a unique double tread, the tire itself is rendered proof against punctures, blowouts, patching and tire troubles, and at the same time is said to give the easy-riding qualities of the pneumatic tires. The Goodyear-Motz tire, by reason of its extra traction and double tread, possesses excellent non-skid properties.

THE TIRE EXHIBITS IN DETAIL.

Continental Rubber Co. (New York)

The exhibit of this company embraced every type of tire it makes, in several sizes. The Atax is a standard clincher pneumatic, and can be fitted to any standard rim. These tires are still sold with a guarantee to roll 5,000 miles.

REPRESENTATIVES.—W. J. Gitch, president; F. C. Mallock, secretary; R. S. H. ... Branch managers: E. L. ... New York; F. S. ... H. M. De Silva, Kansas City; Charles F. Stearn, Atlanta; C. R. Van Auken, Detroit. Salesmen: E. D. Winans, J. E. North, W. ... S. H. ... and R. F. ...

Continental Rubber Co. (Batavia, New York)

The feature of the exhibit of this company was its Security non-skid tires. These have a surface with crosswise slots which do not meet at the center, thus leaving a rib to give the necessary strength to the edges. The regular tires, as exhibited by this company, show no departure from former types, and are of the wrapped tread case and pure gum inner tube type.

REPRESENTATIVES.—A. W. Caney, vice president; L. T. Vance, factory superintendent; Harry L. Graff, president Harry L. Graff, Inc. (sole distributors of Batavia tires); Horace S. de Camp, vice president Harry L. Graff, Inc. Salesmen: A. C. Sloate, W. J. Wilson, and Albert Olsen.

Century Rubber Trading Co. (Plainfield, New Jersey)

Two types of Century tires were shown, the wrapped tread and the anti-skid. In the Century tire the finest grade of Pará gum is used, slow cured and properly compounded to give greatest wearing qualities and the necessary pliability. The carcass is made extra heavy, of a special grade of coarse weave Sea Island duck. Every one of the eight plies of the Century tire is most carefully made—by hand where it is best—and the whole so cured and vulcanized as to prevent wrinkling, or separating of the plies. A special grade of gum is used, which permeates the whole tire fabric, making it at once homogeneous and flexible.

The Century anti-skid tire meets the exacting requirements of such a non-skid type in a practical way. This tread is extra heavy and divided into square blocks of rubber with beveled edges. These edges are hand cut and not molded, as is usually the case on non-skid tires. This makes the edges sharp and enables the tread to get a suction on the road surface, adding 50 per cent. to its effectiveness. This prevents slipping or skidding when running or turning corners up to a speed of twenty-five miles an hour.

REPRESENTATIVES.—D. H. Shay, president; E. H. Tucker, general manager; J. G. ... Cleveland; J. McGinn and C. D. Winslow, New York.

Consolidated Rubber Tire Co. (New York)

Two distinct types of Kelly-Springfield tires were exhibited by this company. These were the pneumatic in both the round tread, and Bailey anti-skid tread, and the sectional or block solid tires for commercial motor vehicles. With the usual attention which the heavy motor truck is now attracting, the Kelly-Springfield block tires received considerable notice. The advantages claimed for this type over the regular type of solid tire, easy to repair, non-heating and that the action or movement of the rubber is not continuous, thus adding to the life of the tire.

REPRESENTATIVES.—V. H. Cartmell, president; F. A. Seaman, secretary; F. E. Holcomb, general manager; O. S. Cook, general factory salesman. Branch managers: F. A. Kissell, Philadelphia; S. F. Hall, Boston; E. S. Roberts, New York. Salesmen: F. A. Oatman, J. B. Eberhardt, E. J. Cabaret, and J. P. Cahoon.

Continental Caoutchouc Co. (New York)

There were three distinct features at the Continental exhibit, the traction tread tire, the detachable, demountable rim, and the Revere solid tires. The Continental traction tread tires are built with the same careful attention to detail as regards quality and superior workmanship which has always kept the name of Continental famous. The numerous rubber studs cannot become loose, as they are integrally constructed and cannot separate from the body of the tire itself.

The Continental detachable, demountable rim has a flanged

band shrunk on the felloe, and upon this the rim bears. This rim is held in place by a series of eight clamps with wedge-shaped projections, which enter between the felloe band and the rim. The rim is prevented from slipping back and forth on the felloe by projections on its under side, which rest in recesses in the felloe. Bolts passing through the clamps and the felloe hold the tire in place. The Revere solid tire, as made by this company, is of the wireless type. The steel base dove-tailed with a hard rubber sub-base upon which is vulcanized the long wearing dependable Revere rubber tread, makes the three integral parts an absolute unit with the wheel.

REPRESENTATIVES.—J. M. Gilbert, general manager; O. S. Twocely, general sales manager; J. H. Sheldon, eastern sales manager; E. E. McMaster, Detroit, western sales manager. Branch managers: E. H. Kidder, Boston; S. S. Poor, Philadelphia; C. A. Gilbert, Chicago. Salesmen: R. M. Hernandez, Chicago; J. C. Given, Philadelphia; J. C. Toomey and F. N. Broadhead, Boston; R. R. Drake, Chicago.

Continental Rubber Works (Erie, Pennsylvania)

The only tires exhibited by this company were those for use on motorcycles and aeroplanes. Although not entirely new, the aeroplane tires attracted much attention. The fabric is a special Sea Island fabric, which has been made up solely for this purpose. Instead of being made of the straight thread fabric, it is a woven fabric, and is especially made so that practically the same resiliency as a thread fabric is obtained, and in addition the tire is much less liable to puncture, and will prove more serviceable. The stock throughout is made especially tough, and the tire is provided with lugs so that it can be securely fastened to the rim. This company also exhibited a complete line of inner tubes, patches, and sleeves.

REPRESENTATIVES.—T. R. Palmer, president and general manager; W. J. Sutter, sales manager New York.

The Diamond Rubber Co. (Akron, Ohio)

The Diamond exhibit was a most complete one, and included pneumatic tires of different types, solid tires, aeroplane tires and motorcycle tires. In the pneumatic tire line this company displayed clincher, quick detachable, "bolted on," mechanical or Dunlop types, all fitted with Bailey smooth or grip tread. The Diamond motorcycle tires are made with a corrugated tread for general use, and a studded tread to prevent skidding. The Diamond company claims to have made the first aeroplane tires, and its product for this use combines extreme lightness with toughness and resiliency.

All Diamond solid tires, whether demountable wire mesh base, side wire or solid clincher, are now made splicless. The argument is obviously that the tires cannot open at the splice and one possibility of weakness is thereby overcome. The wire mesh base tire is a leader in the Diamond group, having been made by this company since the earliest use of the motor driven vehicle for commercial purposes. It is a quick detachable solid rubber tire, requiring no special tools for taking off or putting on the wheel. Another Diamond type is the solid rubber clincher tire, manufactured especially for delivery cots and other light commercial machines.

REPRESENTATIVES.—A. H. Marks, president; W. B. Miller, secretary; James A. Braden, advertising manager; G. R. Reynolds, sales department, Akron; J. Jordan, sales manager, and T. S. Lindsay, office manager, New York. Branch managers: C. Mathewson, San Francisco; N. Oliver, Buffalo; E. H. Fitch, Philadelphia; E. P. Weber, Boston; L. K. Rittenhouse, Pittsburgh; H. J. Woodward, New York. Salesmen: F. W. Suhr, E. J. Sear, and W. E. Hughes, Boston; W. B. Duvall and William Britton, Philadelphia; B. W. Snowman, George A. Davidson, H. C. Mills, W. B. Williams, Jr., C. D. Studebaker, W. F. Lyons, C. E. Parks, — Westlake (solid rubber department), — Hardy and P. E. Le Homidieu (hard rubber department), New York. Sub branch managers: J. A. Vassar, Brooklyn; F. A. Braden, Newark; G. E. Pfeffer and E. B. Williams, Albany.

Empire Tire Co. (Trenton, New Jersey)

This company exhibits its complete line of pneumatic tires for automobiles and motorcycles and its rim. The regular type of Empire tire is made with a raised tread. A new tire made by

the Empire company, known as the disk tread, has disks of fabric placed at intervals, which makes it a non-skid. The disks extend down into the tread, so that they cannot wear out before the balance of the tire is worn out. The disks are of fabric tightly wound, frictioned with high-grade rubber, and when the tire is cured, they become an integral part of the tire.

Where separate clamps are used for holding the rim in place, these are sometimes arranged so that they may be turned sideways when the nut is loosened, so that the nut and clamp need not be taken entirely off the bolt to remove the rim, and so become lost. Such an arrangement is used in the Empire demountable. In this rim the wooden felloe carries a steel band, which is flanged on the inner side of the wheel. The outside of the band is smooth, so that the continuous rim can be slipped over it into place. To this band are riveted eight L-shaped stirrups, extending down over the felloe. The bottom of each stirrup has a shoulder in which rests the end of a clamp, which is held in place by a bolt passing through it and the felloe. When the nut is tight the rim is held between the flange of the band and the upper end of the clamp. The nut has a collar over which the clamp rests, so that a few turns loosen the nut sufficiently to allow the clamp to be turned sideways, permitting the rim to be slid off.

REPRESENTATIVES.—Charles H. Semple, president; A. B. Cornell, secretary, E. B. McKay, Chicago; W. L. W. Perrett, Detroit; C. H. Beardsley, Kansas City; Charles Weiland, Indianapolis; R. N. Paddock, Buffalo; E. B. Richardson, Philadelphia.

Firestone Tire and Rubber Co. (Akron, Ohio).

The feature of the Firestone exhibit was the demountable rims for pneumatic tires and also for solid tires. The latter is described in the main article. The pneumatic tire rim is of the separate clamp type. These are arranged so that the nut need not be taken entirely off. This is accomplished by using a clamp which presses against a wedge ring. The clamp has a slot through which the bolt passes, and the lower end rests on a shoulder of a plate or stirrup fastened to a felloe. When the nut is loosened, the lower end of the clamp can be lifted from the shoulder, and will then drop down out of the way, allowing for the removal of first the wedging ring and then the rim. Other rims of the type have the bolts so arranged that when the nut has been loosened a certain number of turns, the wedge lug is automatically turned out of the way of the rim to allow of its removal, and is again automatically turned up into clamping position when the nut is tightened.

The Firestone exhibit also included pneumatic tires of the smooth tread and anti-skid types, and solid tires of the side wire type.

REPRESENTATIVES.—H. S. Firestone, president and general manager; Will Christy, vice president; R. J. Firestone, sales manager; F. C. Blanchard, assistant sales manager; J. F. Singleton, advertising manager; A. P. Cleveland, show manager. Branch managers: W. R. Walton, Philadelphia; J. V. Mowe, Detroit; F. H. Martin, Chicago; T. J. Glenn, Boston; C. E. Jackson, Pittsburgh. C. H. Gerhold, O. J. Abell, W. F. Bailey, W. F. Ridge and P. B. Bosworth, Akron.

Fisk Rubber Co. (Chicopee Falls, Massachusetts).

The adaptation of its regular product, in the shape of a dual pneumatic tire on a renewable rim for commercial motor vehicle use, was easily the feature of the Fisk exhibit. The Fisk demountable rim, which is used on both single and dual pneumatic tires, has the felloe beveled off through half of its width at an angle of about 45 degrees. Upon the felloe fits a band, which conforms in shape to it and which bears a shoulder upon the side opposite to the bevel. This band is held in place by bolts which pass through the felloe, the band, and lastly a continuous wedge ring which has a similar shoulder. The wedge ring is thus forced up the beveled side and the shoulders grasp a U-shaped channel ring to which the tire is fastened. The web band seen in the older models has been done away with, allowing the use of longer spokes in the wheel and making it lighter.

REPRESENTATIVES.—H. T. Dunn, president; John C. Cole, vice president; H. G. Fisk, secretary; G. A. Ludington, factory superintendent. Branch managers: Claude Pratt, Chicago; Fred K. Ayers, Boston; W. J. Kearny, Toronto and Montreal; C. H. Buchman, Providence; J. P. Ripley, Baltimore; L. J. Gilchrist, Philadelphia; J. B. Cothran, New York; A. G. Bolster, Syracuse. New York salesmen: George A. Campbell, Milton R. Brown, George L. Simpson, Walter W. Adams, Louis N. Mansuy, and C. A. Tremmel.

G and J Tire Co. (Akron, Ohio).

Tires of both the smooth and Bailey tread types to fit Clincher, Dunlop and Q. D. rims were shown by this company. G and J tires were also shown fitted to the various standardized types of quick detachable rims, the patents of which are now held by the United Rim Co.

REPRESENTATIVES.—B. C. Drake, president; R. W. W. W. W. W. H. A. Githens, sales manager; G. H. Hamilton, assistant sales manager. Branch managers: F. A. Drake, Philadelphia; H. A. Harmer, Chicago; A. L. Hasey, Boston; Marcus Allen, New York. Distributors: H. G. Martin, Brooklyn; Frank Berrowdin, Philadelphia.

B. F. Goodrich Co. (Akron, Ohio).

In addition to its regular line of pneumatic tires for pleasure automobiles, the B. F. Goodrich Co. displayed a number of its solid tires, both single and dual, which are of the side wire type. This company, by the way, advocates the use of pneumatic tires on commercial motor vehicles up to one ton capacity.

REPRESENTATIVES.—B. G. Work, president; H. E. Raymond, second vice president; W. O. Rutherford, assistant to second vice president; A. J. Wills, sales manager, pneumatic tires; S. V. Norton, sales manager, solid tires; W. H. Allen, factory manager; H. K. Raymond, assistant general superintendent. W. H. Yule, general manager of The B. F. Goodrich Co. of New York; E. A. Bedell, assistant general manager, New York; T. A. Aspell, manager solid tires, New York; W. R. Kay, manager motorcycle and bicycle tires, New York city, Virginia, and North Carolina. Salesmen solid tires: C. E. Anderson, New York, Pennsylvania, Virginia, and North Carolina; G. A. Walters, New York, Massachusetts, and Connecticut; J. A. Reed, New Jersey and Pennsylvania. Salesmen pneumatic tires: E. W. Bonham (head salesman), New York city; A. F. Schober, New Jersey and Pennsylvania; Ray Rhyne, upper New York; J. F. Haire, Connecticut and Massachusetts; J. H. Groth, New York city and Staten Island; W. A. Coles, Brooklyn and Long Island; R. W. Decker, North Carolina and Virginia.

Goodyear Tire and Rubber Co. (Akron, Ohio).

This company has made a specialty of solid rubber tires and these naturally attracted the most attention at the show. These tires have the retaining wires imbedded in a hard rubber base or core, which is united by a Goodyear process to the soft rubber tread, making them practically one piece.

REPRESENTATIVES.—F. A. Seiberling, president; C. W. Seiberling, vice president; G. M. Stadelman, secretary and sales manager; P. W. Litchfield, factory superintendent; L. C. Van Bever, vice president of the Canadian branch; W. E. Kavenaugh, factory superintendent of the Canadian branch; W. D. Shiels, manager automobile tire department; S. F. Falor, manager bicycle tire department; H. B. Hamlin, manager solid tire department; L. C. Rockhill, manager aeronautic supplies. Branch managers and salesmen: C. W. Martin, Atlanta; J. B. Maus, E. C. Neubauer, and J. C. MacFadyen, Akron; E. F. Jackson and R. P. Dowse, Detroit; A. F. Osterloh, Chicago; F. W. Powers, Washington, D. C.; H. G. Fitler, Philadelphia; W. T. Teagan, William Tenzler, I. W. Penniman, and E. B. Sigerson, Boston.

Hartford Rubber Works (Hartford, Connecticut).

Pneumatic tires of various types, solid tires of the center wire type and demountable rims for these solid tires, and which are described in the main article, comprised the exhibit of the Hartford Rubber Works. This company claims to have made the first endless solid tire and its product has long been favorably known to users of commercial motor vehicles.

REPRESENTATIVES.—J. D. Anderson, president; E. S. Benson, secretary; C. B. Whittlesey, factory superintendent. Branch managers: E. S. Roe, New York; N. R. Barnes, Philadelphia; Chase Sangmaid, Boston; O. S. Johnson, Buffalo; W. T. Powell, Chicago. Salesmen: N. Brown, A. L. Cruden, E. H. Fahey and J. Skelley, New York; E. H. Johansen, E. L. Duffee, and H. Korn, Philadelphia; G. D. Niles and C. Havener, Boston; S. N. Keller, Buffalo; W. H. Reed, M. C. Stokes, C. Clark, E. S. Edwards, James Morgan and F. Kesser, Hartford.

Michelin Co. (Montreal, New Jersey).

On account of their remarkable performance on racing cars, the Michelin pneumatic tires created much interest. The anti-skid tires were recognized by many as old friends, for these were among the first of the kind to be placed on the market. The novel feature of this exhibit was the twin pneumatic tire.

The Michelin demountable rim, as shown, remains unchanged since it first appeared four years ago. Upon the felloe of the wheel is a steel band which is bent at right angles over one side of the felloe and on the other side is bent upward to hold the rim. Clamps having the usual wedge-shape projection, which is inserted between felloe band and rim, hold the rim firmly in place. In all of these it is necessary to remove the nuts entirely from the bolts to change rims.

REPRESENTATIVES.—Hubert Michelin, vice president; R. E. Gloss, treasurer. Branch managers: J. Atwell, New York; L. H. Fiske, Boston; C. W. Scott, Philadelphia; J. S. Scoville, M. W. McKenzie, and H. C. Young, Montreal.

Miller Rubber Co. (Akron, Ohio).

Pneumatic tires and inner tubes comprised the exhibit of this company. Miller tires are wrapped tread construction. The rubber is firmly embedded in the meshes of the layers of fabric which form the walls and carcass of the tire. The tough rubber tread is vulcanized to the carcass, presenting a surface which will endure the greatest possible amount of punishment and permit the greatest possible speed.

REPRESENTATIVES.—William Pfeiffer, general manager; N. B. Quick, New York, branch manager; I. W. Hill, New York; H. L. Cooper, Detroit.

Morgan & Wright (Detroit, Michigan).

The exhibit of this company was devoted largely to pneumatic tires for automobiles and motorcycles. In their Nobody Tread tires Morgan & Wright believe they have the best non-skid tires. This tire is designed to bring the greatest possible length of diagonal projections in contact with the roadbed at one time.

REPRESENTATIVES.—A. I. Phelps, president; J. Weston, sales manager; W. B. Hobbs, New York, branch manager. Salesmen: A. Windover, Connecticut; G. Gallard, New Jersey; W. H. Waters, Long Island; E. Spencer, New York; E. L. Reid, New York city and Brooklyn; J. Tower, New York streets.

Pennsylvania Rubber Co. (Jeannette, Pennsylvania).

In addition to its excellent line of pneumatic tires, which include a plain tread, a vacuum cup tread, a wrapped tread, a flat tread, and a steel studded tread, the Pennsylvania Rubber Co. exhibited the Polack solid rubber tires, the manufacture and sale of which it has undertaken in this country. The Polack tire is a foreign product and is of the wireless type, which is now preferred abroad.

REPRESENTATIVES.—Herbert Du Puy, president; C. M. Du Puy, vice president; George W. Shirely, secretary; H. Wilfred Du Puy, treasurer; Seneca G. Lewis, general manager; G. C. McCullough, New York branch manager. Salesmen: Fred Crebbin, Jr., S. T. Waterman, Dan J. Nally, and D. Dudley F. Yard, New York.

Republic Rubber Co. (Youngstown, Ohio).

At its booth the Republic Rubber Co. featured its staggered tread auto-skid pneumatic tire, and its solid tires for motor trucks. The latter is of the cross wire type and is made of one piece of rubber; that is—the tread and base portions are one and inseparable. The base of the tire is made to conform to the inside of the clincher flange rim, but somewhat wider than the inside of the rim. Through the base of the tire, cross wires are inserted transversely. These wires are spaced about 1½ inches apart and so placed that they effectively stiffen the base of the tire and make it impossible to pull the tire out of the clincher rim.

REPRESENTATIVES.—Thomas I. Robinson, chairman board of directors; J. F. McGuire, president; L. J. Lomasney, vice president; L. T. Peterson, second vice president; Harry Young, manager tire department; Samuel

Robison, manager pneumatic tire department; B. C. Swinehart, manager truck tire department; John Kelley, Chicago branch manager.

Shawmut Tire Co. (Boston, Massachusetts).

Shawmut wrapped tread pneumatic tires, of both the clincher and quick detachable types, were shown at this exhibit. The former is made with a soft, pliable bead to permit it to go over the flange of the rim as the tire is applied and the latter has a stiff fabric reinforced bead.

REPRESENTATIVES.—W. G. Page, sales manager; W. E. Colt and Herbert Rydstrom, salesmen. G. W. Kayton (vice president) and Leonard Veith (secretary and treasurer) of the Baker Sales Co. (New York), sole agents for New York and vicinity.

Star Rubber Co. (Akron, Ohio).

Well known as manufacturers of general rubber goods, the Star Rubber Co. made its first exhibit of automobile tires this year. The company is now confining itself to making pneumatic tires by the wrapped tread process. Its exhibit was very complete and attracted much attention.

REPRESENTATIVES.—F. E. Duff, president; C. D. Downing, sales agent; Ronald Downing, city salesman.

Swinehart Tire & Rubber Co. (Akron, Ohio).

Both pneumatic and solid tires were shown at the Swinehart booth, although this company is devoting its principal attention to the latter. In the base of the Swinehart solid tire are a number of layers of fabric impregnated with rubber which vulcanizes to the tire proper. The fabric prevents any stretch in the base of the tire and eliminates buckling, one of the most destructive faults of solid tires. Transverse rods are molded into the rubber at the widest point of the clinch. The base of the tire is made to fit the clinch perfectly, and also large enough to be slightly compressed when the flange is in position on the wheel.

REPRESENTATIVES.—W. W. Wuchter, president and general manager. Sales managers: C. W. Moody, Akron; F. D. Wait and J. W. Cully (assistant), Philadelphia; A. J. Green, Boston. Branch managers: S. G. Andrews, Detroit; C. O. Dole, Chicago; E. O. Hoopengartner, New York. Salesmen: A. T. Carnahan, Guy Moore, and J. B. McCabe, New York; M. J. O'Connor, Akron.

Thermoid Rubber Co. (Trenton, New Jersey).

Pneumatic tires, including inner tubes, were shown by the Thermoid Rubber Co. In addition, this company exhibited its brake lining, which is now entering into general use. It is claimed for the Thermoid brake lining that it will not burn and is practically wear proof. It affords a quick and positive grip, which is most essential, in automobile use, where emergencies requiring a quick stop are frequent.

REPRESENTATIVES.—J. O. Stokes, president; F. S. Wilson, sales manager; J. H. Kirk, New York; S. G. Lambert, Boston; W. B. Ruston, Philadelphia; John Pohlman, Cincinnati.

Voorhees Rubber Manufacturing Co. (Jersey City, New Jersey).

This company is one of the very few not making complete tires. It exhibited a complete line of tire materials and an innovation in the shape of the "Ideal Twin" sleeve. The "Ideal Twin" sleeve is designed permanently as well as temporarily to provide against blow-outs or rim cuts in automobile casings. It consists of an inner sleeve and an outer jacket, the latter with a wearing tread surface.

REPRESENTATIVES.—John J. Voorhees, president; Charles Dickey, factory superintendent; John Caldwell, branch manager; John Caldwell, Jr., assistant branch manager, Boston.

ONE OF THE MOST GRATIFYING FEATURES of the automobile industry is the remarkable development of the export business during the past three years. In 1908 it amounted to only \$4,464,423, while last year it rose to \$12,144,341, a gain of \$7,459,918.

ONE OF THE LARGEST RUBBER TIRE MANUFACTURERS in the United States announces that the company has been engaged to supply 64 automobile manufacturers with tires during 1911.

Recent Patents Relating to Rubber.

UNITED STATES OF AMERICA.

ISSUED DECEMBER 6, 1910.

- N**O. 977,472. Hose coupling. H. M. Pilkington, Ridgewood, N. J.
 977,492. Tire. [Pneumatic; with armor plates.] J. A. Vitello, Abbeville, La.
 977,549. Combined air rifle, rubber ball, and pop gun. E. S. Roe, assignor to Markham Air Rifle Co., both of Plymouth, Mich.
 977,584. Tire. [Cushion.] J. M. Benham and G. W. Slater, Oakland, Cal.
 977,585. Vehicle tire. [Pneumatic.] P. B. Bosworth, Akron, Ohio, assignor to Firestone Tire and Rubber Co.
 977,586. Fastening means for vehicle tires. *Same*.
 977,587. Detachable fastening for pneumatic tires. *Same*.
 977,588. Fastening device for vehicle tires. *Same*.
 977,589. Fastening device for vehicle tires. *Same*.
 977,590. Vehicle wheel rim. *Same*.
 977,628. Tire. [Solid; with special form of rim.] H. H. Hodgson, Toronto, Canada. [The Endurance Tire Co. has been incorporated at Detroit, Michigan, to market this tire.]
 977,769. Eraser tip for pencils. A. Tregoning, Los Angeles, Cal.
 977,843. Rim for tires of motor vehicle wheels. C. B. Siner, Philadelphia.
 977,844. Rim for tires of motor vehicle wheels. *Same*.
 977,972. Vulcanizer. [Electric heating; for tire repairs.] C. A. Shaler, Waupun, Wis.
 978,019. Tire for vehicle wheels. [Solid.] N. Guthrie and C. L. Johnson, Dallas, Texas.
 978,029. Threadless hose coupling. H. Kell, assignor of one-half each to J. F. Johnson and C. W. Piper—all of Worden, Ill.

Trade Mark.

- 52,439. Gorham Rubber Co., San Francisco. The word *Gorham*. For rubber mechanical goods and tires.

ISSUED DECEMBER 13, 1910.

- 978,210. Tire tread attachment. [Side chains.] O. A. Rixford, East Highgate, Vt.
 978,243. Tire armor. A. F. Walker and J. Gilles, London, England.
 978,274. Puncture proof guard for pneumatic tires. G. S. Crawford, assignor of one-half to R. R. Reed, both of McKeesport, Pa.
 978,304. Rubber attachment. [Relates to overshoes.] H. Karnatz, Menomonee, Wis.
 978,541. Woven elastic fabric. E. Baumgarten, Barmen, Germany.
 978,549. Tire. [Relates to a recessed tread.] J. A. Bowden, Los Angeles, Cal.
 978,583. Apparatus for use in reclaiming vulcanized rubber waste. C. S. Heller, Barberton, assignor to the Moore Architectural and Engineering Co., Akron, Ohio.
 978,584. Process for reclaiming vulcanized rubber waste. *Same*.
 978,619. Hose coupling. B. Morgan, Newport, R. I.
 978,689. Resilient block. N. J. Bushy, Boston.
 978,696. Process for separating rubber or rubber like substances and resin from materials containing the same. J. H. Chanut, Aubrevilliers, France, assignor to Asia Rubber Co. of America, a corporation of Maine.
 978,731. Metallic fabric suitable for pneumatic tires of motor cars and other carriages. [A strengthening sheet to be interposed between the inner and outer strips of tire casings.] C. M. Gauthier, London, England.
 978,766. Tire retainer. C. Markel, Clinton, Iowa.

Trade Mark.

- 49,970. The Goulds Mfg. Co., Seneca Falls, N. Y. The word *Mistry*. For hose nozzles.

ISSUED DECEMBER 20, 1910.

- 978,976. Demountable wheel rim holder. L. Wolff, Jr., Chicago.
 979,008. Tire tread for motor vehicles. M. A. Kennedy, Toronto, Canada.
 979,139. Anti skid device or chain. R. N. Evans, assignor to Atlas Chain Co. of New York.
 979,140. Anti skid device for tires. R. N. Evans and P. T. Hamm, assignors to Atlas Chain Co.—all of New York.
 979,141. Anti skid chain. R. N. Evans, assignor to Atlas Chain Co.—all of New York.
 979,159. Anti skid device for tires. P. T. Hamm, assignor to Atlas Chain Co.—all of New York.
 979,160. Anti skid device for tires. *Same*.
 979,188. Spare tire holder and trunk support. L. P. McKinney, assignor of one-half to J. L. Snow—both of Boston.
 979,241. Heel. [Embraces an elastic cushion layer.] F. L. Alley, San Francisco, assignor to United Shoe Machinery Co., Paterson, N. J.
 979,279. Vehicle tire tool. C. H. Frazier, South Bend, Ind.
 979,316. Eraser for typewriter machines. D. M. Lemon, assignor of one-half to E. V. Page—both of Boston.
 979,325. Tire. H. E. Moebus, Boston, assignor to H. W. Brown, Brookline, Mass.
 979,361. Means for fastening rubber heels. I. Vulpescu, Detroit, Mich.
 979,365. Horseshoe. R. Barclay, Youngstown, Ohio.

Trade Marks.

- 28,111. The B. F. Goodrich Co., Akron, Ohio. The representation of an anchor. For rubber hose.

- 51,748. Wallace, Scott & Co., Ltd., Glasgow, Scotland. The word *Dexter*. For rainproof coats.
 51,977. The Diamond Rubber Co., Akron, Ohio. The number "8338." For insulated wires and cables.

ISSUED DECEMBER 27, 1910.

- 979,408. Hose construction. C. M. C. Baird, Evanston, Ill.
 979,417. Elastic tire for vehicles. A. Buchner, Brüssatz, near Dresden, Germany.
 979,468. Automobile wheel. [A demountable tire carrying rim.] J. M. Gilbert, Mount Vernon, N. Y.
 979,481. Hose coupling. L. J. Hannold, Mexico, Mo., assignor to C. M. Clay.
 979,568. Tire shoe wrapping and vulcanizing apparatus. R. Rowley, New York city.
 979,699. Puncture guard for pneumatic tires. T. H. Prince, Detroit, Mich.
 979,869. Cushion tire wheel. C. A. Marien, St. Louis, Mo.
 979,870. Cushion tire wheel. *Same*.
 979,882. Tire. [Solid rubber.] J. J. Patton, New York city.
 979,883. Tire. *Same*.
 979,889. Tire shoe vulcanizing apparatus. R. Rowley, New York city.
 979,902. Recovery of rubber. [Relates to the preparation of crude rubber.] H. T. G. Van der Linde, New York city.
 979,961. Non skid tire. R. H. Keaton, San Francisco.
 980,138. Pneumatic cushion for vehicles. G. J. Bancroft, Denver, Colo.
 980,173. Rubber footwear. M. C. Clark, assignor to Maurice C. Clark Co., Providence, R. I.

[NOTE.—Printed copies of specifications of United States patents may be obtained from THE INDIA RUBBER WORLD office at 10 cents each, postpaid.]

GREAT BRITAIN AND IRELAND.

PATENT SPECIFICATIONS PUBLISHED.

The number given is that assigned to the Patent at the filing of the application, which in the case of these listed below was in 1909.

*Denotes Patents for American Inventions.

- [ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, DECEMBER 7, 1910.]
 18,643 (1909). Detachable tire rim. H. Foden, Manchester.
 18,644 (1909). Means for securing a spare tire carrying rim to a wheel. H. Foden, Manchester.
 18,711 (1909). Detachable tire carrying rim. T. Dunn, London.
 18,765 (1909). India-rubber bulbs for automobile horns. H. Lucas and B. Steeley, Birmingham.
 18,875 (1909). Device for facilitating the mounting of tire covers on wheel rims. J. McStay, Belfast.
 18,988 (1909). Protective non skid cover for tires. G. Duncan, Wormit-on-Tay, Fifeshire.
 18,992 (1909). Elastic tip for chair legs. W. C. Mackay, Hillhead, Glasgow.
 18,999 (1909). Pneumatic tire tube. J. Jelley, Coventry, Warwickshire.
 19,016 (1909). India-rubber substitutes. A. Smith, Brockley, Kent.
 19,094 (1909). Leather or india-rubber tread bands for pneumatic tires. A. Ascheri, Puteaux, France.
 19,103 (1909). Elastic tire consisting of smooth abutting sections of rubber inclosed in a cover. W. P. Mulic, Leiden, Netherlands.
 [ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, DECEMBER 14, 1910.]
 19,142 (1909). Carrier for spare wheels and rims. F. Keegan and Dunlop Pneumatic Tyre Co., Ltd., Coventry.
 19,170 (1909). Means for repairing tires. H. and H. Tankard, London.
 19,194 (1909). Spring wheel with rubber tread. J. Johnston, London.
 19,218 (1909). Spring wheel with rubber tread. F. Bonnüter, Breslau, Germany.
 19,220 (1909). Heel protector. S. A. Wieland, London.
 19,137 (1909). Heel protector. F. Eldon, Leyland, Lancashire.
 19,283 (1909). Molding india-rubber. T. Gare, New Brighton, Cheshire.
 19,361 (1909). Anti skidding pneumatic tire. A. J. Wilson, London.
 19,400 (1909). Tread band and method of securing same. W. T. G. Ellis, Langside, Renfrewshire.
 *19,412 (1909). Fabrics for pneumatic tires. C. Zeglen, Chicago, Illinois.
 19,468 (1909). Wheel with elastic cushion between the hub and the rim. L. Sterne, London.
 19,591 (1909). Method of attaching elastic tire to rim. R. S. Currie, London.
 [ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, DECEMBER 21, 1910.]
 19,716 (1909). Tire for replacing temporarily a pneumatic. J. M. Strachan, London.
 19,792 (1909). Pneumatic tire comprising an inflatable tube, a cork layer and a rubber or like covering. D. M. Beaton, Crookston, Paisley.
 19,832 (1909). Pneumatic tire for use on land and water. A. W. Long, Bradford-on-Avon, Wiltshire.
 *19,841 (1909). Sound deadening supports for typewriters. C. M. Turton, Los Angeles, California.
 *19,913 (1909). Plate for artificial teeth. G. S. Whittaker, New York.
 *19,926 (1909). Dressing fabric to render it suitable for fire hose. P. L. Wooster, Yonkers, New York.

- 20,146 (1909). Pneumatic tire with air chamber consisting of connected segments. F. G. McKim, London.
- 20,205 (1909). Device for automatically inflating tires. E. Petrini, Ugento, Italy.
- 20,221 (1909). Bottle stopper with a rubber ring. D. Hurst and H. K. Bridger, London.
- 20,252 (1909). Tire inflating pump. A. Reece, Birmingham.
- 20,316 (1909). Bottle stopper with a rubber washer. Cambridge Scientific Instrument Co., Cambridge.
- 20,396 (1909). Spring wheel with pneumatic cushions. A. C. Gillam, Hicksville, Ohio.
- 20,424 (1909). Lever for facilitating the manipulation of the security bolts and valves of pneumatic tires. W. Lemon, Bristol.
- 20,453 (1909). Means for securing detachable wheels. R. W. Maudslay and Standard Motor Co., Coventry.
- 20,508 (1909). Insoles. H. Mortimer and two others, Northampton.
- 20,722 (1909). Spring wheel in which the elastic band by which the inner rim is held in position is made of rubber. J. S. Wesperryde, Amsterdam.
- 20,728 (1909). The silk finish of a fabric preserved by treating it with a substance. F. A. Borchardt, Zittau, Germany.
- 20,879 (1909). Detachable tire carrying rim. W. T. Smith, Bolton, Lancashire.
- 20,883 (1909). Slipping preventing attachment for vehicle wheels. W. H. Ellam and H. McMillan, Anerley, Surrey.
- 20,951 (1909). Spray producing nozzle. G. Olney, Hobart, Tasmania.
- 21,111 (1909). Non slipping device for pneumatic tires. A. Horch et Cie. Motorwagenwerke A.-G. and F. Weller, Zwickau, Germany.
- 21,221 (1909). Pneumatic tire. J. Spyker, Wesperryde, Amsterdam.
- 21,246 (1909). Composing and distributing type apparatus with rubber covered rolls. W. Chipperfield, Romford, Essex.
- 21,250 (1909). Pneumatic tire with segmental tread. W. C. Ellis, Bowdon, Cheshire.
- *21,278 (1909). Elastic tire built of alternate sections of rubber and a fabric such as cotton duck, molded and vulcanized together. L. M. Nelson, Douglas, Wyoming.

THE FRENCH REPUBLIC.

PATENTS ISSUED (with Dates of Application).

- 416,644 (April 22, 1910). Algemeene Uitvinding Exploitation Maatschappij. Process of manufacturing, with the aid of animal matter, an elastic material similar to caoutchouc.
- 416,665 (June 1). Empire Cream Separator Co. Process and apparatus for the manufacture of caoutchouc or similar substance.
- 416,743 (June 2). P. Grill. Armored covering for wheel tires.
- 416,817 (June 6). L. Petz. Demountable anti skidding protector for pneumatic tires.
- 416,851 (June 7). G. Fossi. New type of pneumatic tires.
- 416,873 (April 11). Batrulle and Masquehen. Pneumatic suspension for baby carriages and other small vehicles.
- 416,998 (May 31). E. Janck. Elastic tire for vehicle wheels.
- 417,102 (June 13). P. Roussillon. Process of manufacturing cabled tires.
- 417,154 (June 15). C. F. C. Morris. Improvements applied to the tires of vehicle wheels.
- 417,170 (June 15). Badische Anilin und Soda Fabric. Production of substance having the properties of caoutchouc.
- 417,186 (August 23, 1909). A. Wolber. Process and apparatus for coating fabrics and textile materials with caoutchouc or any other plastic product.
- 417,199 (June 16, 1910). M. Siramy. Pneumatic tire cover.
- 417,312 (June 21). Doherty & Robbins. Improvements on coverings for pneumatic tires.
- 417,368 (June 22). W. B. Hartridge. Improvements applied to elastic tires for the wheels of road vehicles.
- 417,396 (June 23). W. E. Carmont. Anti skidding device for tires and tire envelopes of rubber.
- 417,418 (June 23). Societe des Automobile "Unic." System of tires strengthened by means of checks, triplicated, and so on.
- 417,470 (June 25). T. Cann. Improvements relative to the repair and reinforcement of pneumatic tires.

ARTIFICIAL RUBBER IN THE COURTS.

ONE Albert R. Ellison, of Boston, has been sued by Joseph S. Stearns, of Waltham, Massachusetts, in the sum of \$50,000. The plaintiff alleges a contract between the two, back in 1905, for the manufacture of artificial rubber by a secret process. The terms of the contract, Stearns alleges, were that he was to put up the money, and after it was paid back, they were to share the profits jointly. He now claims that he never got any money back, and that he learns that Ellison has disposed of the secret to the North American Rubber Co. for a substantial amount.

There have been a good many North American Rubber companies, but the only one which has claimed to be alive of late is that incorporated in Maine, in the summer of 1909, capitalized at \$5,000,000, and based upon "a process for the manufacture and production of crude rubber by means of chemicals." They claimed from the outset to have orders for all that they could produce at \$1 a pound. [See I. R. W., October 1, 1909, page 25.] The promoters in a circular of February 24, 1910, stated "the company is already amply financed"; "a large factory is now being fitted up and has already begun to deliver goods"; and a single order was mentioned which would yield "about \$20,000 daily profit" indefinitely.

The promoters of this same North American Rubber Co., in a circular of May 23, 1910, stated many "facts in brief": Factory at Hyde Park "already making \$200 daily profit"; "profits next week about \$400 a day"; "eight thousand shares have been sold in London at \$7.50 per share, but for a few days stock can be had here at \$5 a share." A circular of Wheeler & Shaw, Inc., of Boston, issued in October, 1909, described the capital stock as "divided into 50,000 shares of a par value of \$100, fully paid and non-assessable." C. O. Norcross, signer of the circulars before mentioned, wrote to members of the trade August 2, 1910: "Quite a little of the stock has been sold at \$7.50 per share, and some at the par value of \$10, but I took an option on quite a block at \$5, which has not yet expired, and can furnish you with it at that price." He claimed also that the Hyde Park factory was "already making three or four tons a week at a profit of about \$1,200 a ton," and "a new factory of 20 tons daily capacity has already been bought."

While the trade awaited an opportunity to see the new product THE INDIA RUBBER WORLD was presented with a doormat said to be made of "artificial rubber," but without any supporting affidavit. A stranger visiting the office of this paper proceeded to talk at length on the merits of the new rubber; he was a subscriber and thought that the paper ought to know the facts.

"What is it—refined Pontianak gum?" he was asked.

"I don't really know what is in it," he said; "my only interest in the matter is that of a shareholder in the company." And he withdrew.

The Boston *Commercial* of January 7, 1911, reported: "North American Rubber shares, which were floated at \$5, have recently sold at \$1 a share," indicating that doormats were being made of the shares. Just before, the newspapers had mentioned arrangements had been consummated "whereby Wheeler & Shaw, Inc., who have financed and controlled the North American Rubber Co. from the beginning, will retire." The New York *Journal of Commerce* about that time heard that "with the completion of present arrangements approximately 400,000 shares [\$10 at par] will be outstanding."

Meanwhile no one has been heard to attribute the recent decline in crude rubber prices to any great output by the North American Rubber Co.

THE *India-Rubber Journal* says: "A large proportion of the rubber footwear sold in this country [Great Britain] is still made abroad, and there is little sign of any such movement as has taken place of late years in the leather boot and shoe trade."

The Rubber Club of America Banquet.

THE success of the twelfth annual banquet of The Rubber Club of America, which was given in New York, at Delmonico's, on the evening of January 11, more than justified the expectations of the committee on arrangements and of the membership in general. It was the first dinner of the Club to be held outside of New England, which reason encouraged the attendance of rubber men resident in New York and its suburbs, and farther West.

The Club, founded, according to the articles of incorporation, for social intercourse and for the furtherance of educational and scientific research in india-rubber production and manufacture, was originated as the New England Rubber Club, and now includes the chief members of the importing firms of New York and Boston, rubber shoe manufacturers, and the tire manufacturers of the West, and the industry in general.

The members of the Club and their guests gathered at an early hour in the anteroom to the ballroom, in which the banquet was to be served, where they had an opportunity to greet each other and renew acquaintances. The social feature of the occasion was enhanced by the seating of the diners around small tables. The speakers were seated on either side of the president, at a long table at the west side of the room.

The decorations of the banquet room were particularly effective, consisting of the flags of various countries, red and white carnations, and tiny red electric bulbs, which shone brightly through the foliage which banked the front of the speakers' table, draped with red hangings. Red carnations and tiny red bulbs completed the decorations of this table, back of which were artistically draped the American, British and Brazilian flags. Intertwined along the sides of the room were American and British flags and the colors of the various rubber countries, a most effective complement of the whole being a gracefully draped American flag covering the entire front of the balcony which contained the musicians.

Each individual table contained eight beautiful white pinks and eight small silk flags, mounted on standards, representing the rubber producing countries, and which added very much to the attractiveness of the scene. A photographic view of the room appears as a frontispiece in this issue.

After an invocation by the Rev. Sidney Ussher, D.D., assistant rector of St. Bartholomew's church, the president of the Club (Mr. Henry C. Pearson) said:

GENTLEMEN OF THE RUBBER CLUB OF AMERICA, AND GUESTS: Republicans, Democrats, Prohibitionists, Suffragists—whatever your previous condition of political servitude, whatever your present political faith—I ask you to join me in drinking to the health of the President of the United States. [Applause.]

I shall have to ask you to be just as quiet as possible, in order that I may make myself heard. The particular reason lies with me, this time, that I have had about two weeks of tonsillitis, and I would not have talked to any other Club on the face of the earth than this, my own Club, tonight. [Applause.]

I am delighted to do it. I am proud of the way in which we have broken in upon New York. As far as I can see, the dinner has been a complete success, and you all have had a good time.

There are two or three things, besides my shred of a voice, that ought to be apologized for, perhaps. There was a mistake in the seating, but, after all, what is the use of apologizing. We are all having a good time; we are all here, and it is where we want to be.

I have a very courteous letter from Colonel Colt, who regrets that he cannot be with us. He says that another year he surely will be here. I am sorry, too. I won't read the letter, but it is in his particular courteous vein, that we all know and admire. [Applause, and songs of "He's a Jolly Good Fellow" and "So Say We All of Us."]

Now, as we have learned that the Kellys are not invisible, it won't be necessary to sing "Has Anybody Here Seen Kelly?" That, however, is one of our features [referring to a regular item of the Club dinner programme] that I hope we will always keep up; because it is a touch of human nature that all love. [Applause.]

You all know of the very important suits that are now being carried on in Washington. We expected that the Hon. William M. Ivins would be here this evening, and that he would give us, in a few words, the result of a decision, *pro* or *con*, upon the rubber trade. Mr. Ivins was very anxious to do that, but he is held in Washington until Thursday, and sends his regrets.

That does not mean, however, that we are left without a very brilliant array of speakers. Before I introduce the first, I want to say, I went from London through the Mediterranean, through the Suez canal, the Indian ocean; down through the Straits of Malacca, up through the China sea, and clear to Hongkong before I saw the Stars and Stripes, and then it was not on a merchant vessel; it was on one of the old "Monitors" that had been towed across the Pacific and left there; because they couldn't take it anywhere else, and didn't dare do so.

Last winter when I went down through the Southern oceans and up the Amazon and back, I saw the United States flag once, and then not on a merchant vessel. What I am leading up to is that we have as our guest this evening the Hon. Lewis Nixon,* who knows more about shipping, the world's shipping, than probably anybody else, and who, for twenty-seven years, has been studying it in its relation to American commerce. [Hear! Hear!] He is to talk to us, and we are very fortunate. [Applause.]

THE AMERICAN MERCHANT MARINE.

THE Hon. Lewis Nixon, the first speaker, delivered an elaborate address upon a subject to which he has devoted lifelong study, and which was listened to with great interest. Mr. Nixon holds that no one question bearing upon the industrial life of the United States today is more important to every American citizen than that of bringing back the American flag upon the seas—in other words, the rehabilitation of our merchant marine.

The great overmastering power upon the oceans of the world is England, the present proud condition of whose merchant fleet rests upon about 160 years of national endeavor. The result of wars waged directly for commercial aggrandizement was to give England the mastery of the seas, with power to fix the tolls for the carrying of freight throughout the world—the master voice in every international dispute, the arbitration of exchanges and values the world over.

Back in the days of wooden ships England was dependent for the most part upon imported wood to put into her ships, but she frowned upon the purchase of any foreign ships at all, and the only ships that flew the flag of her navy were either built in English shipyards or captured from the enemy in wars. From the beginning of the British empire it was realized that the extent of that empire was to be measured by the capacity to build and sail ships, for in order to assert your rights upon the sea you must sail it with your own ships and under your own flag.

In time iron supplanted wood in shipbuilding, which changed England from a non-producer of material for ships to a position of masterly advantage in that particular art. Then came our civil war. Before that time the American merchant fleet sailed every sea, but during the four years of the war it disappeared England having a good deal to do with bringing about this result.

After the war the people of the United States turned their attention to internal development, while England turned herself to the development of ocean commerce. The revenues of such an empire are largely in proportion to the area covered; England's area was the world, and she waxed strong. But

* Mr. Nixon, after being graduated from the United States Naval Academy, was sent by the navy department to the Royal Naval College at Greenwich, England. He designed several battleships, including the *Oregon*, after which he left the navy and became attached to the Cramp shipyard, in Philadelphia. Still later he has been engaged in shipbuilding on his own account, including the construction of a number of vessels for the government. He represented the United States as a delegate to the Pan American Conference at Buenos Aires and as special ambassador at the recent centenary of Chile.

about 1890 appeared upon the horizon two challengers to her anticipated sway, the United States and Germany.

The United States confined her interest in this field to the building of a navy. Such navy as we had before that time was the joke of other nations, and public sentiment was slow in supporting any proposal toward modernizing it, but the work continued until there is a new navy of which every American is proud.

machinery; we couldn't make the metal plates of which her hull was built; we couldn't make the manganese bronze and other combination castings which were required under the drastic conditions at that time. But today the metal arts of the United States lead the world—due to the salutary effects of the navy.

The speaker told how the United States once had a flourishing merchant marine. When the thirteen British colonies in America achieved their independence it was soon found to be impracticable, on account of the various methods that they had to regulate commerce between this and the rest of the world. The controlling cause of the union of our States, and of our present government, was the absolute necessity of some central power to regulate commerce with foreign nations. This being the case, we had the men who had achieved our independence, and the great leaders in public thought at that time, to bring about and mold a constitution. The very first act of these men, when they were called together in the first Congress, was to pass laws for the regulation of commerce, and when we speak of regulating commerce we mean to so regulate it that it shall not disappear from the seas.

At that time we had no merchant marine in the foreign trade. We were repeatedly going into debt to Great Britain and to other nations of Europe. We were helpless upon the seas. So the first Congress passed laws levying discriminating duties upon imports carried in foreign bottoms, and discriminating tonnage dues, and providing that only home built ships should fly the American flag. In less than five years, under this initial legislation, our ocean shipping had increased 385 per cent., and by 1826 American ships were carrying 93 per cent. of our commerce upon the ocean. In time, however, the operation of some of the American laws already mentioned was suspended, with the result of discouraging the American shipping trade and aiding the foreigner.

Let us see what it means to the United States to have our

own commerce carried in our own ships. One trouble with our statistics of foreign trade is that they give only a statement of the imports and of the exports. But there is somewhere a steady drain upon our resources which does not appear in the national trial balance—a drain of the earnings of the foreign ships which carry our ocean trade. It amounts to about \$300,000,000 a year, and during the last 25 years it has amounted to more than \$6,000,000,000 in gold of the United States paid to foreign ship-owners.

Our statesmen, at the birth of this nation, considered that its greatness would depend upon three pillars—commerce, agriculture and manufactures. We have neglected one of these, in consequence of which the national structure is becoming lopsided. It will not be trued up, and we shall have alternate periods of depression and prosperity, until we make shipping a great factor of the commercial earnings of our fleet.

Every ship that carries a cargo abroad, that you pay for carrying it, reduces your credit abroad. If you pay freight to foreigners on the imports that you bring in here, you increase your duty here; and so, no matter how you put it, or how you place it, every cent paid to foreign ships, and which might be paid to American ships, is a draft upon the resources of this country, and is shown in the exchanges of the world over, and that is the theory propounded by all those who took this great control of this factor of prosperity of the United States.

We hear a great deal nowadays about the revision of the tariff. Before the war we had two strings to our bow—the tariff tax and the earnings of our merchant ships. Today we have only one, and if we absolutely throw down all the barriers of the other string to our bow—the tariff—what a fine condition we should be in. The only way in which we can bring about that tariff revision which is necessary and essential in our industrial life, that we may send our products abroad, and cease to be merely producers and consumers, is to say to the rest of the world: "You can no longer do our carrying, and insure our goods, and do all the middleman's work and take all the middleman's profit, because the Americans propose henceforth to do that for themselves."

As to means that have been suggested for re-establishing American shipping, the speaker referred to free ships. The purchase of enough ships abroad to carry our share of international commerce, he said, would cost hundreds of millions of dollars, to be drawn from the resources of the country. And then, with these ships owned here, there would remain conditions, described by the speaker, which would handicap America in the competi-



HON. JAMES GUSTAVUS WHITELEY.
[In the uniform of Consul General of the Congo
Free State.]



HENRY C. PEARSON.



H. E. RAYMOND.

tion. The English freight rates today, he said, average the highest in the world, and yet they do most of the business; they have control of the insurance, they have control of the inspection, and so on.

He would have conditions changed to the end that American shipbuilding be encouraged. To the objection that ships cannot be built as cheaply here as abroad, he pointed out that upon the great lakes of the United States are to be seen ships, of home make, that in character, in efficiency, adaptability to service, in economy of operation, and in price, cannot be matched upon the face of the earth. They have a demand for a particular kind of ships which fills various yards, and enables them to specialize. The builders of the great British liners have their yards filled with a particular line of product, working every day and always turning out the same kind of thing, and when England turns into the waters of the world 1,800,000 tons of shipping a year, it will be seen what advantage she has when we attempt to compete with her in the retail way, while she goes wholesale at the job.

They say that the foreigner can run ships more cheaply than Americans. Time was when we ran ships in fair competition with the whole world, before the great combines on the ocean had been brought about, and at a profit.

And if you can today carry a ton of merchandise per mile upon our railroads at a fraction of the cost that any other part of the world can, and pay our men ten or twelve times as much, can you say that the American, under his own flag, with a great national plant to do it in the wholesale way, cannot uphold the freight connections with the rest of the steamship lines of the world—that we can't do the same thing that we did in the past, when we had a national government which stood for Americanism?

Mr. Nixon does not favor a subsidy for shipping. First, because he does not regard it constitutional; second, because the government could never vote enough money out of the treasury to establish a new merchant marine. Somebody else would always be ready to put up more and take away the business. He considers a postal subsidy proper, however, under the constitutional grant to Congress of the power to establish post offices and post roads. While this would not, alone, keep at home the earning of the hundreds of millions now sent abroad for freights, it would be an entering wedge. The great foreign ships which carry ocean mails to and from the United States, Mr. Nixon spoke of as having been built "out of the profits of the trade which we furnish, and which we are perfectly satisfied to turn over to the rest of the world."

Speaking of shipping facilities between the United States and South America Mr. Nixon said:

You gentlemen in this room who are interested in rubber will find that the ship of your own country is the better ship to pass along and push your trade than the ship of some other country. The foreigner is going to sell his own goods first every time. He is insured at home; all his various connections are made at home, and his whole idea of how to be prosperous is to have the country back of him prosperous. I glory in that particular faculty of the foreigner; he seems to have some idea that charity should begin at home and not abroad, while the altruistic Americans seem to think that they must help the rest of the world before they help themselves.

The keynote of the speaker's remarks was that to be a great nation it is necessary to be a self-contained nation. If we are going to carry our flag upon the sea in merchant ships we need a great cargo carrying marine to co-operate with the mail steamers, and this can come only through some general policy of governmental encouragement. The nations of the earth have been on the alert always to take advantage of treaties into which we have entered, and the speaker pointed out instances where the government at Washington had freely given to foreigners advantages which it was not bound to do, instead of reading the constitution to mean that the power of Congress to regulate trade means to bring about a preference for the American ships—to try to drive trade into the American's hands. The rebuilding of the merchant marine is to be brought about through the exercise of this constitutional right—by the sweeping aside of privileges which have been given to foreigners at the expense of our own people—by abrogating or terminating commercial treaties, if need be, and insisting upon new terms. Every one of the existing conventions has a clause providing that it can be suspended upon the giving of notice, and shall we not have the courage of Americans to assert ourselves when, in the course of time, a bargain made in the shape of a convention is found to be inequitable?

THE RUBBER COUNTRY OF THE CONGO.

The President said:

I very much wish that I had time to comment upon the scholarly and patriotic and comprehensive address that we have just listened to. But, after all, you don't want to hear me talk; you want to hear the rest of the speakers; and, therefore, I will draw your attention to the other side of the earth—to the Congo.

We have, as a guest this evening, the Hon. James Gustavus Whiteley, the representative of the Belgian government in its great Congo holdings. Mr. Whiteley has consented to say something about the future development of the Congo. Mr. Whiteley.



PROF. HENRY H. RUSBY.



HON. LEWIS NIXON.



CRESWELL MACLAUGHLIN.

Mr. Whiteley responded as follows:

MR. PRESIDENT AND GENTLEMEN: I, THE RUBBER CLUB OF AMERICA. Your President said this evening that he had a great many things to apologize for, which he would not do so. I don't want to say that I am "It." When your President asked me to say anything tonight I gladly accepted, because, as King Solomon said in Ecclesiastes, with which you are all familiar as Bible students: "Who can utter who can hasten thereunto more than I?"

I didn't quite understand what a rubber dinner was. I thought, perhaps, it might include theatrical properties, such as rubber stocks and elastic sausages, and, possibly, in the fish course, rubber "slices" and rubber "fells." But I found that I was mistaken. And when your President further invited me to say a few words—and he was so fearless of your interests that he forgot to accent the word "few"—I gladly accepted that invitation, too, not because that I had anything special to present to your consideration, but I was glad of the opportunity to salute the elite of the rubber trade at your annual dinner, and to wish you success and prosperity for the New Year.

The rubber business seems to me the greatest in the world. There is nothing like rubber. It used to be thought that it was "love" that made the world go round; but it seems to me now that it is "rubber." All the world goes round on rubber—rubber soles, rubber heels, and rubber automobile tires; and those who do not go round on rubber automobile tires are soon run down and have to go around on crutches fitted with rubber tips. So we can't avoid it. [Laughter.]

I have been connected with the rubber business for a number of years on the producing side, not on the manufacturing side. For five or six years I was the Consul General of his late Majesty, King Leopold, representing the interests of the Congo Free State in America. And when the Congo State was officially annexed to Belgium, as a Colony, it ceased to exist as a sovereign independent State, and its Consul General officially died with it.

You remember—but I hope you do not—the old clergyman, who, in reading the Scriptures to his congregation, came to the words "We shall not all die, but shall all be changed," but the Bible was well thumbed and the "e" in the word "changed" had become completely obliterated, so that the good old parson read the words just as he thought he saw them, and announced to his congregation, "We shall not all die, but shall all be hanged."

Well, gentlemen, when the Congo Independent State died I did not die in the flesh, nor was I hanged; I was changed. I ceased to have an official position, but I still have the honor of representing the Belgian government on the boards of various *concessionaire* companies which are largely interested in the production of rubber in Africa.

Thirty years ago the Congo produced no rubber—that is to say, commercially. It was there in the trees, but none was exported or used. In fact they produced very little except cannibals and a lot of unfortunate natives who were rounded up by the Arab traders and sold into slavery. But now all that has been changed. The Congo State at the present time produces about 10,000,000 pounds of rubber a year, besides other tropical products, such as cacao, ivory, and palm oil, which, altogether, yield some \$15,000,000 of exports. And in the near future we hope to increase that material, and all this has been brought about principally through the genius, foresight, and initiative of one great man—his late Majesty, King Leopold II.

The Arab slave traders have been put out of business. A civilized government has been established, so that the merchant and the missionary may dwell in peace and safety, instead of furnishing a festal meal for the natives. Now cannibalism only really exists in the outlands of the State and the less accessible regions.

But the work which was commenced under King Leopold is not all. This is just the beginning. That was sort of rough work—just the cleaning off of the ground. The King has passed away, and his nephew, King Albert, now reigns in his stead; and there is no one more capable, or more fitted, to carry out the great work than King Albert. He is a young man of about 35 years, remarkably patriotic, devoted to his country and to his people, very conservative, and one who has fitted himself for the task that is before him, and he is supported in that task by a remarkably intelligent and gracious Queen. And this royal couple have won the confidence and the love of the Belgian people.

About two years ago King Albert paid a personal visit to the Congo. He spent some six months out there—went all through the country on foot or by canoe, and examined the possibilities and the probabilities which confronted him.

Under King Leopold the country was largely developed by *concessionaire* companies, and also by the government itself. The government was in the rubber business, which was inevitable. It was the only possible way of developing the country at that time and under those circumstances.

Large commercial companies have developed the United States to some extent. Massachusetts was developed by a large commercial company, and other portions of this country were. The great East India Company developed India for the English empire, and so it was in the Congo. But now things have changed. Under the new régime these

large *concessionaire* companies seemed destined to disappear. But those that already have franchises and rights will preserve them, though they will have a restricted area, and the Congo government, which formerly worked the rubber on about one-third of the Congo Free State, will gradually go out of business.

Formerly it was necessary for the government to be in the rubber business, on account of the fact that they needed revenue. It couldn't get revenue by import duties or by export duties, on account of treaty obligations. But they thought that by opening up the country to free competition they would so develop the rubber trade that the export duties on rubber would compensate them and, to a certain extent, enable them to carry on the government.

In 1910, in July, about one-third of the Congo Free State was declared open to free trade, and within the next three years practically the whole of the State will be opened to free trade in rubber, to whoever chooses to go into the trade.

At present there isn't a great deal of American capital interested in the Congo. There are two companies in which American capital is employed; one is the American Congo Co., of which nearly half the capital is American, and the other, the Congo Forestry and Mining Co., of which about 25 per cent. of the capital is represented by Americans. I hope that, as the time goes on, Americans will come in more and more and will trade and form companies and increase the commerce between the Congo and the United States. Part of that, I hope, will come under the American flag, which Mr. Nixon has spoken of, and I hope a few pounds will be left to the Belgian flag, because I think they are entitled to it as the producers of the goods. [Applause.]

A question has been raised as to the continuity of the Congo output. Up to the present the Congo rubber has been gathered in rather a primitive way, and in perhaps a somewhat expensive way. Laws have been passed regulating the way in which the rubber shall be gathered, so as not to ruin the plant, and also laws to compel the replanting. But all of this has been not always effective, on account of the fact that the native labor is very irresponsible. You send a native out in the forest to gather rubber, and you really don't know what he does.

Under the new régime, which has been started by King Albert, there are to be new plantations under the care of the State itself; and the State has set aside about \$200,000 or \$300,000 a year for starting up these new plantations, which it hopes will continue the rubber product. In addition to that, one of the companies, of which I have the honor to be a director, has received about 2,000,000 acres of land on which to start new plantations. It was the idea of the late King, and of the present King, that something should be done there to have a continuous product, and this company, of which I am a director, has started out with these 2,000,000 acres to set out part of it one year and part another year, and part another year, so as to have a continuous rotation of gathering of rubber, so that it shall be inexhaustible. I don't know yet what the result of that will be; because we have just started and only have a few hundred acres under plantation.

Gentlemen, one of the greatest of England's Lord Chancellors, when he was about to die, said that he had regret only for two things: one was that he had walked on a certain occasion when he might have ridden, and the other was that he had once made a speech when he might have kept silent. I may perhaps regret that I made an unnecessary speech tonight—and that will be on my dying bed only—but I think in the meantime the regret will be only on your side. [Cries of "No!" and applause.]

A TALK FROM THE TRADE.

The President introduced the next speaker as follows:

The City of New York has some very large, very thrifty and very capable suburban cities and towns. Among those is the City of Akron [Cries of "Hurrah!"] where is situated the factory or the factories rather, of The B. F. Goodrich Co. [Applause.] One of the bright particular stars of that great company is with us to-night. He may say what he wishes; we will subscribe to it. Mr. Howard E. Raymond. [Applause.]

Mr. Raymond said:

MR. PRESIDENT, GUESTS, AND FELLOW MEMBERS: Having survived the danger zone through which every public speaker passes—the soup course—so that I may present you a clean shirt front and also a bold personal front, I will start in to dabble with the wide latitude of speech which the President has just assigned me. He has thrown me evidently into the midst of a very large ocean, and he doesn't care whether I get to land on an English, French, American or German bottom; and I don't believe he cares whether I am a stray steamer; but I am going to make a desperate attempt not to sink.

So, then, this is the New England Rubber Club, *alias* The Rubber Club of America—an annexation of New York by New England. It is splendid!

Now, in searching for a subject—and I have only been searching since I sat here and listened to the brilliant preceding speakers—it occurred to me, as neither one of them had seized the opportunity of addressing you on the subject of the Club, that I myself, who have

never attended a previous dinner, and know absolutely nothing about this Club, am preëminently fitted to address you on that subject. [Applause.]

Now, with malice aforethought, I am going to endeavor to so mangle this subject that no other speakers, if there are others to follow me, will dare attempt it. [Laughter.]

And in comparison, perhaps, I might touch—well, I may say the subject will be largely "Clubs vs. Trade Associations"; because I am deeply interested in Trade Associations, and I think we have a particular field for a Club, as differentiated from a Trade Association. The Club takes in everything; the Trade Association narrows you down to a manufacturer or manufacturers of a class of goods that apply to a certain industry.

Tonight, I assume we have here rubber brokers—God bless 'em—[applause], and the manufacturers of fabric, and the manufacturers, perchance, of the inner tube of a self filling fountain pen, and the inner tube of a tire, and in between these is the great mass and multitude of manufactured products we all turn out collectively.

We have here in the Club the men who sell each other. [Laughter.] You can't get that in a Trade Association. And it is a grand thing for us to have reached the point where we can have a Club, and that is a splendid name—Club—when socially applied.

We have come into the broader sphere of New York. You have had to come down to the cyclone center where the wind blows, to gather a meeting of this size. I am rather impressed with the fact that the meetings have heretofore been smaller. It is no reflection on the New Englanders here—and I think they predominate at the moment—but they have now opened the door for us to come into this Association or Club, and so I want it to be called that, and not drift into a Trade Association.

Don't let this Club take up at any time the work of the Associations. That would be a mistake. You can't do it with a diversified membership, such as this Club has today and wants to have in the future. The Trade Association can follow a direct and concrete line to accomplish a specific object; because every member in that Association has the same object in mind. But we want to meet here socially, as buyer and seller, and know each other—know each other better than we ever have in the past—and just let it be a social organization.

Trade Associations take up credit, and I would hate to have my fellow member in my Club bothering about my credit. [Laughter.] It might be embarrassing to him, and a very bad thing for me. Trade Associations take up trade abuses. Sometimes they dabble in the unfair practices. They try to tell their members that they are not following the exactly legitimate channels of trade, in their efforts to boost their products. We don't want the members of the Club to do that, and so I say there is a big field, to my mind, for this organization.

It ought to grow—ought to meet once a year and have some speakers from among ourselves, as well as the brilliant speakers from outside; and if later on we get to know each other better, we might go into the general question of trade situations, and sniff in each other's pigpen.

For instance, today the rubber trade is in perhaps a semi demoralized condition, caused, very largely, by our friends from the Congo, the rubber brokers, and so on. They raised the prices to a very high point, and then pulled the pegs out so fast that we couldn't even dig our toe nails in as we slipped down hill. Now, the consequence has fast created a hesitating buying market. The average buyer can't be expected to place goods on his shelves on a declining market, and if a man can't feel it now, he can't feel anything.

So I say that because our salesmen's reports are not as enthusiastic as they have been, and they haven't got that constant line of orders, with prices extended, that are customary with them, we say to ourselves "the other fellow must be getting it because we are not getting it." Now, as a matter of fact, the business is not there, and because we think the other fellow is getting the business, we put in force practices that in ordinary times, and with the exercise of level, clear headed judgment, we would never possibly think of doing.

We run a great risk at the present moment of creating for ourselves a period of demoralization that will take several years to recover from—just because we believe the other fellow is getting the business. [Applause.]

I hope there won't be many occasions like this, when we have to put ramrods down the backs of our dress suits and lean on them strong and feel they are there; but it seems to me almost the psychological moment—the opportunity to show you the condition the trade is in today. It is just like a jelly fish—when anybody touches it, it shivers and shakes. Now, we don't want that. If we can have any interchange that will help things, and keep us from making bad breaks, that is all right; but don't let us feel that there is a great big sea of trade outside, and that we are not getting it because the other man is getting it. It is not there.

Gentlemen, I am not going to say much more. I want to emphasize the fact that you have got a Club today that compels esteem, and ought to be kept a Club, and not take up trade subjects, because the trade is well supplied with associations for that purpose.

I want to say that Mr. Pearson has made a very generous apology, at the start of his speech, for almost everything that might have happened. But I am particularly keen about the way my name is placed on the official seating documents. I am down as H. G. Raymond. [Mr. Raymond's name is H. E.] My initials spell the two best things on earth—"He" and "Her" [laughter]—and I am rather keen on that. I call it to his attention, in case I should ever be commanded to attend another banquet.

I should like to say, as I close, that the preceding speakers were graciously invited to this banquet; I could tell that from the way they talked. I was ~~anxious~~ invited to appear here, and I obeyed the command in the interests of your worthy President and your entire Association, and I am only sorry that I was not privileged to enjoy membership with you many years ago.

Gentlemen, I thank you.

IN LIGHTER VEIN.

THE editor of *The Schoolmaster*, Mr. Creswell MacLaughlin, being on vacation from the seat of his serious labors, at Cornwall-on-Hudson, New York, had left behind all of him that savors of business, and entertained the guests with a succession of witty epigrams, funny stories suggested to him by the occasion, and rare bits of humorous philosophy of which he had deprived the readers of his pedagogic magazine for the doubtless more appreciative audience that gathers round a festal board. Such an after-dinner talk would, of course, be spoiled by trying to present it through the medium of a stenographer's notes.

RUBBER PLANTING UNDER OUR FLAG.

After Mr. MacLaughlin's speech the President said:

I have decidedly changed my mind with regard to that quiet burg known as Cornwall-on-Hudson. As our last speaker, and one who, if he is willing to tell us what he knows, will be most interesting, I want to introduce Professor Henry H. Rusby, who has spent much time in Mexico, and knows very much about what we would like to know.

Professor Rusby, after a pleasantly humorous introduction, got down to his subject as follows:

When Mr. Pearson asked me to speak this evening, he said he wanted me to speak on two subjects—first, something about the prospects for the growth of the guayule rubber shrub in Texas; and, second, the prospects for the successful cultivation of rubber trees in the Philippine islands.

I want to tell you, gentlemen, that I believe that in the whole realm of applied science there are very few things so difficult to do as to predict the results of an experiment in the commercial cultivation of rubber plants. I don't know of anything else more uncertain. As a matter of fact, the rubber business is pretty uncertain all the way through, except the Wall Street end of it. That is always certain, of course. You can always tell what you must expect on Wall Street, and you can make your calculations and base sound business policy on what is going to happen in Wall Street. Wall Street might be called the balance wheel which keeps the rubber market stiff.

To give you an idea of how difficult it is to state whether there is going to be success in the cultivation of rubber I will relate one or two occurrences. One of my friends said to me one day:

"I am thinking of investing in a rubber plantation in Mexico. I suppose you would know all about it and can advise me."

"Well," I said, "let us suppose that you are going to put \$10,000 in it."

That, it happened, was just the amount he was going to put in.

"All right," I said; "go to the bank and draw your \$10,000 in gold, and put it into two bags; put one of those bags in your safe; take the other out on a ferryboat and drop it into the middle of the North river, and you will save just \$5,000."

That was the uncertainty in those days. That wasn't in this last rubber growing flurry—this last one, you know, that surpasses the power of expression—but this was one that happened a good many years ago.

Since that time we have actually got to growing rubber, and I think, on the whole, it is promising; but as to how promising it is, I would rather advise somebody else about that than to put my own money in it. It don't cost you so much when you advise somebody else. It is the uncertainty of it.

Now, some of you know that there are some cactus plants. You know that there are a great many spiny things that grow on the desert that ignorant people call cactus that have nothing to do with cactus; but there are a few true cactus plants which contain milk, and in that milk there is a little rubber—not enough to be of economic importance, but it is an interesting scientific fact.

We were fortunate enough at the New York Botanical Garden to get some of those cactus plants growing there, and they were such a great success that Dr. Britton, when he had a certain visitor come

...and proceeded to show him ... from these plants after they were cut. He stuck his knife into them and not a drop of rubber came out, ...

I have myself gone through groups of rubber trees of exactly the same kind. There wasn't even a difference of variety, but one of them ... from the other group, and the third one was about intermediate between the two. And in the same week, one of those groups of trees didn't yield one drop of rubber milk; another one yielded a considerable quantity, but it coagulated in the cut, and wouldn't flow; and the third group of trees would yield from one to two liters of rubber milk each, rich in rubber. Nobody can tell why it is. I tell you that there are very few of us scientific people who feel that we actually know any facts at all about the relations of the rubber latex to the life of the plant that produces it, and until we find that out, there is not much use of speculating about the rubber.

Now, you all know that Central American rubber tree, which ought to be known as *Castilleia*, although improperly known as *Castilloa*. We used to suppose it was one tree. Now there are at least ten different species, and half of them don't yield any rubber milk at all. When I am asked about the possibilities of the cultivation of the *Castilleia* rubber tree in the Philippine islands, how do I know? One which in Central America produces only a little rubber, may produce a great deal in the Philippines. It is largely guesswork. We can study it as carefully as we want to, and the man who is honest with himself doesn't want to say anything unless he has a good scientific basis for it. But I should say, Mr. President, that the chances for the cultivation of rubber trees of many of the kinds that we have, in the Philippine islands are very good. I think the climate of the Philippines is such that we could have the *Castilleia* grow well in certain sections. Some *Castilleia* trees are growing there at present and doing splendidly, and I expect to see success down there.

I do not believe in a country doing anything for which it is not fitted, and wasting its money, just for the mere sake of saying what it has done. Of course, there is a middle, conservative ground. But I wouldn't believe in trying to grow rubber plants in any territory of the United States, unless the territory was fitted for it. If there are two things, one of which is fitted for your own soil and another that is not, for heaven's sake grow it on the soil which is best fitted. But so far as rubber is concerned in the Philippines, I fully believe that we are going to see it grow.

Now, as to the growth of the guayule shrub in Texas—there is another very difficult problem. I would like to know if there is a man in this room who is able to say that he feels sure that the cultivation of the guayule shrub anywhere in the world is going to pay. I am not. I have studied it very carefully, and the only reason that I am inclined to believe that it will pay even in Mexico, its native country, is that the Rockefeller crowd have gone into it pretty carefully. [Cries of "No"!]. Well, I have heard it. They don't generally go into anything unless they are pretty certain it is going to succeed.

When we first studied that guayule shrub, we were told that it would take at least thirty years for it to reach the full production. After that we were told fifteen; then we were told that in five years, although it hadn't reached its full growth, it would still produce a great deal of rubber. So there are all those things still to be determined.

My friend, Professor Francis E. Lloyd, has studied it very carefully for a number of years, and he has established the fact that the guayule shrub can be cultivated; it can be propagated freely and cultivated under proper conditions. But, whether the time of production will be so far postponed that the interest on the investment and all the expenses connected with it will make it unprofitable, that is a thing that I do not think we can positively say until we try.

Now, as to guayule growing in Texas. There is a shrub growing in Texas which is very similar to the Mexican guayule, and closely related to it. The two plants have descended from some common stock, and if that common stock has produced in Texas a plant which is different from the one in Mexico—I ask those of you who know anything about the evolution of plants—doesn't it stand to reason that the climate of Texas is adapted to that one which developed there and not to the other one? I don't know about Texas, but I do think that there are parts of the desert territory of southern California where the guayule plant can be cultivated with success if this is possible anywhere. The only question is whether we can grow guayule anywhere, if we can't grow it in the regions that I have mentioned.

Before I close I want to tell you of a little incident. When I was listening tonight to the interesting and most instructive address of Mr. Nixon, I remembered an experience of mine back in 1886 that I thought would interest you, as rubber men.

In that year I made a voyage of thousands of miles which took nearly a year. I traveled in ships built in foreign countries, and which I bought in those foreign countries, and I put the American flag on the ships, and I flew it through the whole voyage. There wasn't a day when it wasn't there. The first ship I bought consisted

of seven logs tied together to form a raft. Some of you gentlemen may have been down to my pier in Bolivia, on the Napo river, and you know that little rocky shore. And that little river in places was so shallow that the logs of the raft grated on the stones as they went over. That is where I bought my first ship, and over it I raised my American flag. When we had gone so far that we had a little deeper water and could float a bigger raft, we kept the flag still afloat, until we got down still further and made a "dug out" canoe out of a huge log, almost as long as this table, and the flag floated over that. When we went through the valley of the Madeira I had about seventy men, and perhaps seven or eight boats, and the flag floated there, and when we finally got to the lower Amazon and we boarded an English river steamer, I asked permission of the captain, because we had had this flag so long, to let me stick it up on the boat, and it was hailed all the way to Peru. So there is a case where somebody carried the American flag in foreign waters.

Well, about that journey, gentlemen, another thing that will interest you, perhaps, is the fact that in 1886 I bought rubber at \$3.60 for 28 pounds. And how much is that? About 13 cents a pound. I sold it afterwards at an advance of 35 per cent., and I thought I had made a big thing out of it. The best rubber in this country then was worth about 65 cents a pound. The most interesting thing, however, was that when I sold out my rubber and got Bolivian dollars for it, those dollars were worth 22 pence, and I exchanged them dollar for dollar for Brazilian money, worth 42 pence on the dollar—nearly 100 per cent. on exchange. And then, Mr. Pearson, some people have got the gall to say that scientific men haven't got business ability. [Applause.]

GOOD NIGHT.

The President said:

Now, in saying good-night, let us rise and consider our rising a general vote of thanks to our distinguished guests and speakers this evening.

All rose.

SOME OF THE LETTERS OF REGRET.

Mr. Paul Morton, whose lamented death a few days later is reported elsewhere in this paper, wrote regretting his inability to accept an invitation to the dinner.

From the Governor of New York:

Delayed replying invitation January 11, hoping could arrange acceptance, but obliged to decline, with much regret. Accept appreciation for yourself and friends.

JOHN A. DIX.

From the President of the United States Rubber Co.:

I had hoped to be able to be with you at the dinner of The Rubber Club of America this evening, but find it impossible to do so. I know that you will excuse me, and I shall trust another year to have the pleasure of meeting with you.

Wishing you every success, which I know from past experiences you will have, believe me always, Very sincerely yours,

SAMUEL P. COLT.

From Mr. William M. Ivins:

I regret very much that my professional engagements in Washington will detain me there until Thursday, and that therefore I shall be unable to attend the dinner of The Rubber Club of America to be held on January 11. Very truly yours,

WILLIAM M. IVINS.

AT THE PRESIDENT'S TABLE.

Those seated at the President's table [see the frontispiece to this issue], naming them from left to right, were Messrs. J. O. Stokes, Charles A. Daniel, H. W. DuPuy, A. M. Paul, H. E. Raymond, Ex-Governor A. O. Bourn, Sidney Ussher, D.D., L. Dewart Apsley, Hon. Lewis Nixon, Henry C. Pearson, Hon. J. Gustavus Whiteley, George B. Hodgman, Professor Henry H. Rusby, Frederic C. Hood, Henry Spadone, Arthur W. Stedman, John H. Flint, and Cresswell MacLaughlin.

The reception committee at the dinner consisted of the following members of the club: H. W. French, George H. Mayo, F. D. Balderston, R. L. Chapman, F. H. Appleton, W. E. Barker, Charles J. Bailey, W. H. Gleason, W. J. Kelly, George P. Whitmore.

No banquet that the club has given was as notable in arrangement, in the brilliancy of speakers and in attendance, with the possible exception of that at the Hotel Somerset, Boston, when the Hon. L. D. Apsley was president.

MEMBERS AND GUESTS ATTENDING.

A

Adelbert H. Alden. (New York Commercial Co.)
John Victor Alden. (New York Commercial Co.)
Edward B. Albrecht. (Continental Rubber Co.)
A. J. Anderson. (Essex Rubber Co.)
L. E. Appleton. (F. H. Appleton)
I. Dewart Aspley. (Aspley Rubber Co.)
J. Hague Armitage.
Charles H. Arnold. (Poel & Arnold)

B

Robert Badelger. (Robert Badelger & Co.)
Charles J. Bailey. (C. J. Bailey & Co.)
Collier W. Band. (Rubber Trading Co.)
Robert B. Band. (Rubber Trading Co.)
Robert L. Baird. (Rubber Trading Co.)
William T. Band. (Rubber Trading Co.)
Frank D. Baberston. (United States Rubber Co.)
Walter S. Ballou. (United States Rubber Co.)
William E. Barker. (United States Rubber Co.)
O. A. Barnard. (J. H. Lane & Co.)
Charles W. Barnes. (United States Rubber Co.)
William L. Bass. (General Rubber Co.)
Theo. W. Bassett. (U. S. Rubber Reclaiming Co.)
Harold H. Bedell. (Bourn Rubber Co.)
E. W. Belcher. (American Hard Rubber Co.)
J. Warren Bird. (Malaysian Rubber Co.)
Benjamin Booth.
Augustus O. Bourn. (Bourn Rubber Co.)
Augustus O. Bourn, Jr. (Bourn Rubber Co.)
S. W. Bourn. (Bourn Rubber Co.)
James Boyd. (James Boyd & Co.)
Capt. A. A. Brigham.
Richard D. Brice. (Kerite Insulated Wire and Cable Co.)
Andrew H. Brown. (A. T. Morse & Co.)
A. W. Burns. (Rubber Import Co.)
Ira L. Burnham. (Stoughton Rubber Co.)

C

A. H. Caspell. (H. O. Canfield Co.)
C. C. Cass. (Revere Rubber Co.)
J. H. Chadbourne.
J. J. Chandler.
R. L. Chipman. (George A. Alden & Co.)
E. H. Clapp. (E. H. Clapp & Co.)
Charles A. Coe. (United States Rubber Co.)
William T. Cole. (Fabric Fire Hose Co.)
D. B. Collins. (Oxford Tripoli Co.)
A. J. Congdon. (New York Insulated Wire Co.)
A. J. Conlin. (Philadelphia Rubber Works.)
A. Boyd Cornell. (Empire Rubber Manufacturing Co.)
E. E. Curner.
D. A. Cutler. (Continental Rubber Co.)

D

Charles A. Daniel. (Quaker City Rubber Co.)
Dr. Frederick Danneth.
Charles J. Davol. (Davol Rubber Co.)
Fred. W. Dunbar. (New York Commercial Co.)
Wilmer Dunbar.
Harry T. Dunn. (The Fisk Rubber Co.)
H. W. DuPuy. (Pennsylvania Rubber Co.)
Walter Dutton. (Continental Rubber Co.)

E

R. M. P. Eagles. (J. Spencer Turner Co.)
W. P. Earle, Jr. (Earle Brothers.)
C. F. Edgerton.
Charles A. Emerson. (United States Rubber Co.)
R. H. Ernest.

F

Eberhard Faber. (Eberhard Faber.)
Lothair W. Faber. (Eberhard Faber.)
Thomas F. Falls. (Birmingham Iron Foundry.)
E. E. Fay. (Boston Woven Hose and Rubber Co.)
D. Feinburg. (The Loewenthal Co.)
John J. Field. (New Jersey Carspring and Rubber Co.)
M. P. Fillingham. (Birmingham Iron Foundry.)
H. S. Firestone. (Firestone Tire and Rubber Co.)
John H. Flint. (Tyler Rubber Co.)
W. L. Fort.
Frank F. Fox. (Rubber Trading Co.)
H. W. French. (New York Commercial Co.)
H. P. Fuller. (E. H. Clapp & Co.)

G

Hoskinson Gates.
James F. Giles. (American Hard Rubber Co.)
Alfred A. Glidden. (Hood Rubber Co.)
Wallace L. Gough. (W. L. Gough Co.)
Fred. Gove. (New York Commercial Co.)
N. David Green. (American Rubber Co.)

H

George E. Hall. (Boston Woven Hose and Rubber Co.)
E. W. Harral. (Fairfield Rubber Co.)
Marion Hawes. (Gutta Percha and Rubber Manufacturing Co.)
Isaac H. Hayes. (Merchants' Rubber Co.)
J. J. Hawkins. (United States Rubber Co.)
Eliot Henderson. (Manhattan Rubber Manufacturing Co.)
J. W. Healy. (Bloomfield Rubber Co.)
Henry F. Hering. (New York Rubber Co.)
George F. Hichborn. (United States Rubber Co.)
Edward H. Hicks.
Helen S. Higgins.
William Hildner. (Peerless Rubber Manufacturing Co.)
George B. Hodgman. (Hodgman Rubber Co.)
S. T. Hodgman. (Hodgman Rubber Co.)
Frederic C. Hood. (Hood Rubber Co.)
M. G. Hopkins. (A. T. Morse & Co.)
H. B. Hubbard. (United States Rubber Co.)
E. E. Huber. (Eberhard Faber.)
F. H. S. Hyde.

J

Ernest Jacoby. (A. T. Morse & Co.)
C. Con. Johnson. (J. H. Lane & Co.)
J. Johnston.
Frederick H. Jones. (Fisk Rubber Co.)

K

John Kelly.
Welling Katzenbach. (Katzenbach, Bullock & Co.)
E. B. Kelly. (Mechanical Fabric Co.)
William J. Kelly. (Poel & Arnold.)
H. L. Kenyon. (Kenyon Co.)
M. E. Kramer.

L

H. W. Laird. (Earle Brothers.)
Claude Lashelle.
P. W. Litchfield. (Goodyear Tire and Rubber Co.)
A. Lloyd.
G. A. Ludington. (The Fisk Rubber Co.)

M

J. F. MacGuire. (Republic Rubber Co.)
Creswell MacLaughlin.
A. H. Marks. (Diamond Rubber Co.)
Henry Marshall. (Waterbury Co.)
Ed. Maurer. (Ed. Maurer.)
George H. Mayo. (William F. Mayo & Co.)
Dr. Frederick J. Maywald.
John J. McGill. (Dominion Belting Co.)
F. R. McKenna. (Bourn Rubber Co.)
L. P. McMichael. (L. P. McMichael.)
George E. Melius. (H. O. Canfield Co.)
Otto Meyer. (A. T. Morse & Co.)
W. B. Miller. (Diamond Rubber Co.)
Henry Montgomery. (New York Rubber Co.)
Herman Muehlstein. (The Loewenthal Co.)
Edward Murray. (Empire Rubber Manufacturing Co.)

N

Hon. Lewis Nixon.
Albert Numbers. (Thermoid Rubber Co.)

O

C. H. Odell. (Essex Rubber Co.)
James E. Odell. (James E. Odell.)
H. G. Ous. (Westinghouse Electric and Manufacturing Co.)
K. J. Owens. (Boston Woven Hose and Rubber Co.)

P

Wallace G. Page. (Hood Rubber Co.)
R. E. Paine. (United States Rubber Co.)
Theodore R. Palmer. (Continental Rubber Works.)
W. H. Palmer. (United States Rubber Co.)

John H. P. Le. (G. L. V. Mack & Co.)
John S. Patterson. (Revere Rubber Co.)
Henry C. Peckham. (The Isaac Rubber Works.)
Alexander M. Paul. (Davidson Rubber Co.)
L. E. Phelps. (Essex Rubber Works.)
Edward Phipps. (United States Rubber Co.)
W. L. Picher. (Easthampton Rubber Thread Co.)
Walter E. Piper. (Boston Rubber Shoe Co.)
Wilson Potts. (New York Insulated Wire Co.)
George J. Prescott.
F. C. Pusinelli. (Heilbut, Symons & Co., London.)
George B. Pusey. (New York Insulated Wire Co.)

R

Howard L. R. (The B. F. Goodrich Co.)
Henry D. Reed. (Bishop Gutta Percha Co.)
Arthur Reeve. (United States Rubber Co.)
Edward R. Rice. (United States Rubber Co.)
Robert L. Rice. (Hood Rubber Co.)
John P. Rider. (New York Rubber Co.)
P. L. Rider. (Worcester Rubber Co.)
Paul H. R. R. (R. R. R.)
W. G. Rockwell. (W. G. Rockwell)

S

R. P. Sachs.
W. F. Sanders. (Thermoid Rubber Co.)
Homer E. Sawyer. (United States Rubber Co.)
George L. Schell.
Hugh Scott. (Philadelphia Rubber Works.)
Frank A. Seiberling. (Goodyear Tire and Rubber Co.)
S. J. Sill. (Hewitt Rubber Co.)
Helen Spaulding. (Gutta Percha and Rubber Manufacturing Co.)
R. F. Spencer. (United States Rubber Co.)
E. W. Spurr. (J. H. Lane & Co.)
Arthur W. Stedman. (George A. Alden & Co.)
E. H. Stedman.
Charles E. Stokes. (Home Rubber Co.)
J. Oliver Stokes. (Thermoid Rubber Co.)
Robert J. Stokes. (Joseph Stokes Rubber Co.)
W. G. Stokes. (Joseph Stokes Rubber Co.)
Griswold Stowe. (Stowe & Woodward.)
Walter L. Swasey.

T

A. B. W. Tallman. (A. B. W. Tallman)
I. H. Thomas. (Poel & Arnold.)
W. W. Thon.
A. D. Thornton. (Canadian Consolidated Rubber Co., Limited.)
Arthur F. Townsend. (Manhattan Rubber Manufacturing Co.)
E. L. Toy. (Buffalo Rubber Co.)

U

Rev. Sydney Usher, D.D.

V

Harold Van der Linde. (Continental Rubber Co.)
Lindley Vinton. (Bartica Estates, British Guiana.)
John J. Voorhees. (Voorhees Rubber Manufacturing Co.)

W

Elston E. Wadbrook. (Poel & Arnold.)
F. W. Wadbrook. (Poel & Arnold.)
F. D. Wanning. (Birmingham Iron Foundry.)
W. H. Wanning. (Birmingham Iron Foundry.)
A. W. Warren. (Hodgman Rubber Co.)
E. F. Waterbury. (Waterbury Co.)
Dr. E. T. Waterhouse. (Hawann Rubber Growers' Association.)
Edward Webber.
Hon. James Gustavus Whiteley.
George A. Wies. (Lynch, Lee Hose Manufacturing Co.)
Elisha S. Williams. (Rubber Goods Manufacturing Co.)
Warren Williams. (The Hodgman Rubber Co.)
Charles T. Wilson. (Charles T. Wilson.)
Fred. Wilson. (Thermoid Rubber Co.)
Charles E. Wood. (New York Commercial Co.)
F. R. Woodward. (Stowe & Woodward.)
Bertram G. Work. (The B. F. Goodrich Co.)
W. W. Wucher. (Stowe & Woodward.)

Specifications for the Purchase of Materials II.

*H. Frederic Dannerth, Ph.D.**

THE manufacturers' criticism of a Specification, before the same is issued, is to-day regarded as a most important part of the proceedings. The old idea that the consumer was to dictate to the manufacturer what the former wanted has given way to the broader view—namely, that the specification should contain or should represent the best that is known on the subject, no matter where the information has been obtained. To leave out the other party to the contract is unwise, unfair, short sighted and foolish. The specification should be so drawn that the manufacturer can actually see that he has had a part in its making.

After criticisms from all those qualified to criticize have been received, the provisional specification is remodeled so as to include all suggestions which may be of actual value. In those cases where criticisms conflict, it has been observed that this is frequently due to local conditions. There is one pre-eminent thought that appears worthy of careful consideration in the whole mode of procedure—namely, the greater the care, the larger the amount of study and the more well directed time and effort that are put upon the specification before it is issued, the less will probably be the difficulty connected with it after it has once become a part of the contract. It might, in fact, be said that the most valuable specification represents the fruition of the studies of those who make investigation into the properties of useful materials, and of those who use them.

VALUE OF CHEMICAL DATA.

When specifications for steel were first issued there was opposition on the part of manufacturers to the insertion of chemical data. They claimed that the consumer should only specify the physical properties of the metal and exclude or limit by chemical data only the objectionable constituents, leaving the steel maker free to vary those constituents (upon which the most valuable properties of the steel depend) according to his own ideas. Now it is clear that a certain set of physical properties produced by high carbon and low manganese in steel may yield a steel more valuable to the consumer than approximately the same physical properties produced by lower carbon and higher manganese, or the interchange of the constituents commonly affecting the physical properties of steel. To repeat what has been previously said: A good specification is the result of the joint effort (1) of those who know steel from its behavior while it is being manufactured, and (2) of those who know steel from its behavior while in service.

SIZE OF SAMPLE FOR TESTING.

It has been found difficult to make a hard and fast rule as to the weight or volume of material which should be represented by one sample. Where the material is made in batches, and the sample is selected at random, the sample obviously represents that batch. In the case of oils and paints the question of sampling is more difficult. Such shipments are made up of material resulting from a number of like operations, without any certainty as to uniformity in the output of each complete operation. In such cases the sampling must needs be rather arbitrary, but if there should be any indication of lack of uniformity in the shipment, an amendment to the specification is probably called for.

NUMBER OF SAMPLES TAKEN.

Let us now consider the question: How many individual parts shall make up the average sample? If the shipment consists of 20,000 pounds of soap, shall we take one pound for examination or shall we take several pounds from different parts of the ship-

ment? If 50 barrels of linseed oil have been received, shall we sample one barrel or every barrel? Some consumers contend that the shipment is presumed to be uniform, and that the number of samples should therefore be limited, small unimportant variations being allowed for in the specifications.

RE-TESTS.

When a shipment is received, sampled in the prescribed way, tested and found wanting—what then? The producer frequently asks for another test, in the hope that this may show more favorable results and allow the material to slip in. If the second test is favorable, the consumer is naturally anxious to make a third or "decision" test. Specifications are not drawn for the purpose of making it easy for irregular and possibly carelessly made material to be accepted. It is far better to make the limits of the specification wide enough, when they are first drawn to cover all the uncertainties in manufacture and eliminate carelessness, bad judgment, or any attempt to sell an inferior product at the price of a good one.

BRANDING REJECTED MATERIAL.

Another difficult point is covered by the question: "Is it possible to so draw a specification that material which has once been rejected will not be offered a second time?" The Government has adopted the system of placing marks on rejected shipments, a practice which lowers the value of the so rejected material and makes it necessary for the manufacturer to raise the price in order to cover himself. But for the larger number of products which are covered by specifications (oils and soaps) identification marks are unavailable. One way in which to obviate any difficulty is to insert in the contract a clause stating that the manufacturer must pay return freight on rejected material. One purchasing agent settles doubtful cases by refusing to accept future bids from firms who make it their practice to return rejected goods.

HOW SPECIFICATIONS AFFECT THE BUSINESS OF THE PRODUCERS.

Many manufacturers object to specifications on the ground that they are annoying and really serve no good purpose; others have distinctly requested them. Some consider a difficult specification a direct advantage as it eliminates the competition of inferior products. It must ever be borne in mind that low prices must be the result of some unusual manufacturing facilities or, as is more frequently the case, the indicator of poor quality. A good specification is the best protection that can be offered the manufacturer of honest goods.

HOW SPECIFICATIONS AFFECT PRICES.

In many cases the consumer is afraid to adopt specifications, thinking that the price of the product will be raised by the producer. Experience has in fact shown that after the producers have become accustomed to the new specifications, their prices invariably drop to a greater or less extent. This observation has been variously explained: (1) as being due to the fact that all bidders are bidding on the same quality of goods; (2) the material defined in a specification represents what might be called "standard material" so that manufacturers can, without great risk, fill in idle time with its manufacture; (3) as the material is "standard" the manufacturer can without fear of loss purchase the constituents in a favorable market.

RULES GOVERNING SPECIFICATIONS.

In addition to the points previously emphasized, there are given below certain rules (by Dudley) which may be followed to advantage by those who draft specifications.

*Consulting Chemical Engineer, Philadelphia

1. All parties whose interests are affected by a specification, should have a voice in its preparation.

2. The limitations contained in a specification may be derived from any source of knowledge and the tests may be microscopic, physical or chemical.

3. The specification should contain all the information which is needed by those who are to enforce it; this includes the chemist, the engineer, the purchasing agent, and the superintendent.

4. The service which the material is to perform, in connection with reasonably feasible possibilities in its manufacture, should determine the limitations of a specification.

5. Proprietary articles and products made by processes under the control of the manufacturer cannot, from the nature of the case, be made the subject of specifications. The consumer may, however, determine the chemical and physical properties of any preparation and incorporate these in a specification, in case that substance has given eminent satisfaction.

6. The sample for testing must always be taken at random by the consumer. The amount of material represented by one sample must be determined by the nature of the material, the value of the material, its probable uniformity, and its importance.

7. Average samples, made up of a number of samples, should only be prepared in cases where the limits of the specification are so narrow that they do not cover the ordinary irregularities of good practice in manufacture.

8. Re-tests of material which has once been rejected should be allowed only on very good grounds. They are justified when there is a doubt as to the exactness of a test.

9. If it is desired to sell rejected material to a consumer, a concession in price must be made, but rejected materials should never be used in places where they may endanger life and property.

10. When a consumer has purchased material on specification it is unfair to ask of the manufacturer any guarantee covering the behavior of the material in service.

11. It should as a rule be unnecessary to mark rejected material, when dealing with reputable firms, but if necessary an inconspicuous private mark may be applied. In any case the manufacturer should be obliged by contract to pay return freight on rejected shipments.

12. Specifications should be examined, and if necessary revised, six months after they have first been put in force. This will allow for the introduction of the knowledge and experience gained by actual usage.

13. In testing materials, if the results are just outside of the prescribed limits, an allowance should be made for the probable error in the method of making the test, but gross discrepancies should in every case lead to a rejection.

14. A complete workable specification should combine within itself the harmonized antagonistic interests of both the producer and the consumer. It should have the fewest possible requirements consistent with securing satisfactory material, should be so comprehensive as to leave no chance for ambiguity or doubt, and, above all, it should embody within itself the results of the latest and best studies of the properties of the material which it covers.

NEW TRADE PUBLICATIONS.

THE catalogues for 1911 for the various footwear companies embraced in the UNITED STATES RUBBER CO., already mentioned [see INDIA RUBBER WORLD—January 1, page 128] have been followed by a Gross Price List and also a Net Price List, dated January 1, for each of the companies, these being uniform in size and style— $3\frac{1}{2} \times 6\frac{1}{4}$ inches, 16 pages. They are accompanied by net price lists of Felt Boot Combinations, "Hastings" and "Michigan" brands.

SPRINGFIELD RUBBER CO. (Springfield, Massachusetts), who are

jobbers of rubber goods generally, issue a comprehensive and tasteful appearing 1911 Catalogue from their footwear department, under the title "Full Description of Kinds, Styles and Sizes of Rubber Boots, Shoes, Combinations and Tennis." The footwear brands they distribute are the product of the Boston Rubber Shoe and Woonsocket factories.

CAPEN BELTING AND RUBBER CO. (St. Louis) issue an illustrated descriptive catalogue of Belting and Accessories which nearly approaches their avowed ideal of a catalogue—one that shall be "practical, useful, and attractive." This book contains much detailed information of use to belt users, and lists leather, rubber and balata beltings, giving no fewer than 16 pages to the latter. [6" x 9". 96 pages, loose leaves.]

THE SCHAEFER RUBBER CO. (Cincinnati and Detroit) issue a new catalogue of Rubber Goods for the Home, illustrated with cuts of about all the lines of products covered by this title. [4" x 5" 1/2. 128 pages.]

CALENDARS FOR 1911.

ONE of the handsomest calendars for the new year comes from the Adamson Machine Co. (Akron, Ohio). The large card on which are attached monthly tear off leaves is embellished with a reproduction by color photography of an original painting by Dobson, entitled "The New Arrival."

The calendars sent out by the different rubber companies are not only more artistic and attractive in appearance year after year, but they are beginning to cover more wall space. The new calendar of the Lambertville Rubber Co. (Lambertville, New Jersey) is 24 x 36 inches. Its embellishing feature is "The Lambertville Girl"—a picture in colors, life size, of a young woman equipped for golfing.

John Royle & Sons (Paterson, New Jersey) send out a neat booklet labeled "Reminder and Daily Memoranda," in flexible leather, vest pocket size, containing, in addition to calendar and numerous details valuable for reference, a space for entries for every day of the year.

The G & J Tire Co. send out a neat desk calendar with monthly tear off leaves, mounted on a brass stand which may be used permanently by the substituting of new calendar pads.

The calendar of the Western Rubber Co. (Goshen, Indiana) is adorned with a reproduction, by color photography, of a painting entitled "Morning," showing a scene in the vale of the Treignac, France, by the notable artist Gaston Anglade.

American Rubber Manufacturing Co. (Emeryville, California) send a calendar on a card $6\frac{1}{4} \times 9\frac{3}{4}$ inches, carrying a picture in colors, "My Chauffeur," from a painting by Philip Boileau, the chauffeur in this case being a beautiful girl. It is one of the most attractive calendars received.

Meyer Cohn, a waste rubber merchant of Hanover, Germany—with United States offices at No. 117 Chambers street, New York—sends out a handsome "Notiz-Abreiss-Kalender für das Jahr, 1911," suitable for wall use, and containing a tear off leaf for each day in the year, with spaces for daily memoranda.

A PAN AMERICAN CONFERENCE.

AN invitation comes to THE INDIA RUBBER WORLD to be represented at a "Pan American" commercial conference, to be held under the auspices of the Pan American Union, in its new building in Washington, during the week of February 13-18. The discussion is planned of an expansion of reciprocal trade relations between the United States and the twenty Latin-American countries, to be participated in by representatives of commercial and other interested organizations, private firms, educational institutions, and so on. It is expected that the Rubber Club of America will be represented, and this journal hopes that the proposal of this conference, by the able director general of the Pan American Union, the Hon. John Barrett, will meet a cordial reception among those for whom it is intended.

Congo Rubber and the Antwerp Market.

IN a recent issue of the *Antwerp Rubber Review* for November 1910 Messrs. Grisar & Co., the official brokers, again confine their remarks mainly to the decline of the natural supplies in the Belgian Congo (formerly the Congo Free State), and the outlook for rubber cultivation there. First, however, may be introduced a table of the arrivals of rubber at Antwerp during the last ten calendar years:

YEARS.	Congo State.	Other Sources.	Total.
1901	5,417,456	431,742	5,849,202
1902	4,992,954	411,031	5,403,985
1903	5,180,401	546,082	5,726,483
1904	4,723,618	1,040,238	5,765,856
1905	4,442,607	1,271,121	5,713,728
1906	4,593,759	1,178,303	5,772,062
1907	4,346,141	708,332	5,054,473
1908	4,262,531	772,813	5,035,344
1909	3,492,332	1,193,626	4,685,958
1910	3,105,357	953,319	4,058,676

Messrs. Grisar & Co. say:

RUBBER PLANTING IN THE CONGO. The period of transition through which the Belgian Congo is at present passing, in the course of the change from the old to the new government, finds expression in a certain reduction in the exportation of rubber, but it is permissible to suppose that this decrease will only be temporary, especially if private enterprise applies itself to the obtaining of everything possible from the rich sections thrown open to its commercial activity. It is really to be wished that our countrymen will neglect no effort to profitably exploit the plans made by the government, with a view to encouraging the development of commerce in the colonial territory.

Among these plans, which are the subject of an order, dated March 22, 1910, it is particularly stated that the vine rubber must now be collected by means of incisions, by gashes, or by cutting the plant. It is in every case forbidden to root up or cut up into sections the roots of the plant, or to cut, gash or reduce to sections, the principal stem in the part that rises to 1.50 meters above the ground. And in regard to the latex of rubber trees, it must only be collected by means of incisions or practical gashes in the bark of the trunk, without penetrating into the *cambium*. In another part are also indicated certain modifications in the cultivation of rubber yielding trees in the Belgian Congo.

A certain number of plantations of caoutchouc *lianes* have been abandoned, the expense entailed by their maintenance being out of proportion to the results to be expected. Moreover, a large number of these *lianes* have attained such a height that they surpass the vegetation which usually forms the undergrowth of a Congo forest and their further growth is also assured. These plantations may, however, be regarded as re-plantations, undertaken with a view to preventing the impoverishment of the forests in rubber yielding trees and they cannot be regarded as regular plantations.

There should be no further prosecution of the cultivation of these plants, except in certain stations, of a purely experimental character. The plantation, in this case, should be started in the open field, and the *lianes* thus obtained should be set apart for experiments by tapping and by crushing of the bark with the aid of improved machines.

The cultivation of the *Hevea Brasiliensis* will undergo a material extension in the equatorial portion of the territory, and especially in the districts of the Equator and of the Bangala, where the rainfall is most copious and most regular. There have been, so far, twelve centers designated, of which five are in Bangala and two in the Equator. Three parties are at present traveling through the districts named, in order to study the locations most favorable for the establishment of *Hevea* plantations.

The selection of suitable territory is a most important matter; the yield speedily shows, in the Congo, the result of any error in the location chosen; the fall of rain is no more than moderate, even in the equatorial regions.

A sufficiently large quantity of *Hevea* seed has been imported from Ceylon. A goodly number of *Hevea* plants at Coquilhatville have come into full bearing. More than 350,000 seeds have been collected and placed in the nursery of the botanical garden of Eala; their germination has been very satisfactory.

The cultivation of *Manihot Glaziovii* will be extended at the station of Bokala (Central Congo). The growth of this variety there is rapid, and the experiments in the extraction of latex made on trees of ten years of age has given satisfactory results.

Certain stations in the Uelé are equally well adapted to the cultivation, on a large scale, of this tree, the climate being characterized by a very pronounced dry season, which seems favorable to the normal growth of the *Manihot*.

Experiments in the extraction of latex made on the *Manihot Glaziovii* have given satisfactory results, and certain trees, subjected to regular

tapping during several months, have yielded more than a kilogram of dry caoutchouc. These experiments are being continued, with a view to ascertaining approximately the annual production of trees of a certain age.

The *Funtumia elastica*, while developing in a very satisfactory manner in certain sections of our colony, appears to present quite considerable difficulties as regards regular and successive utilization. As a fact, this variety does not appear to possess, to an equal extent with the *Hevea Brasiliensis*, the faculty of submitting to repeated tappings during a prolonged period. The production of latex at the first tapping is far superior to that of the *Hevea*, but after several days the secretion ceases. The method of tapping employed for the *Hevea* does not seem, moreover, suitable for the *Funtumia*. Systematic tappings were made after determining the process best adapted for the utilization of this tree.

Regular experiments have already been made at the station of Libenge (Ubangi), and the results are encouraging; the quantities of caoutchouc obtained have, however, been very inferior to those yielded by the *Hevea*, which was to be expected.

QUALITY OF CONGO RUBBERS.—The quality of the Congo rubber leaves nothing to be desired, and the parcels received this year fully maintain the standard previously reached. We would, nevertheless, impress once more on the shippers the necessity for withdrawing the gathered product as quickly as possible from the disastrous effects of the tropical sun; too long a stay in the humid surroundings is incompatible with the good preservation of the caoutchouc, especially where it is stored in uncleanly warehouses or those subject to flooding.

The plantation varieties and divers sorts have proved difficult to assimilate on the part of buyers. The prices realized represent, to a great extent, the equivalents of foreign markets.

QUALITY OF PLANTATION RUBBERS.—It would appear to us a matter of interest to examine, at this point, into the present intrinsic value of plantation rubber, compared with that of Pará fine.

At the beginning, when the plantations produced only infinitesimal quantities, plantation rubber brought a price about 10 to 15 per cent. higher than Pará, because of its great purity and its light and uniform color, combined with its large yield, allowing its use for certain special, but limited, purposes, for which, while a fine looking gum was required, great elasticity was not demanded. Opinions were fairly divided on the question as to whether the elasticity of plantation rubber was equal to that of Pará forest rubber, or whether it was inferior to the latter. Some claimed that its elasticity is inferior, because it is furnished by young trees, while for Pará only old trees are tapped; others attribute this condition to the method of coagulation in use on the plantations. We believe that the latter are right. As a fact, the method of coagulation employed in Amazonia could not be applied to relatively small quantities of latex collected separately and daily from the thousands of subjects on plantations of a tappable age. After a slight addition of water is made to the latex for the purpose of retarding the coagulation until it reaches the factory, the process is accelerated by a slight addition of acetic acid. If this is not made quantitatively and judiciously the excess of acid appears to deprive the rubber of part of its elasticity.

Apart from this, the latex supplied by the *Hevea* in the Far East possesses, according to the most competent experts, the same qualities as that from the Pará forests. It is, therefore, in the method of coagulation, that we must seek the solution that will place the plantation rubber absolutely on a level with that from Pará. Every effort of specialists is being brought to bear just now on the study of this question, and it is reasonable to anticipate the solution of this important problem in a short time. The great manufacturers will then not hesitate to finally change their machinery to enable them to use the new product as regularly as the Pará, which is not the case today, and this explains why the premium formerly paid for the rubber furnished by plantations has disappeared, although, in manufacturing, this product continues to give a superior result, compared with Pará.

COMPARATIVE ANTWERP PRICES (FRANCS PER KILO).

	Dec. 31, '09.	Dec. 31, '10.	Decrease.
Kasai, red. I.....	14.00@14.37	13.50@13.75	4.34%
Leanda II kind.....	11.00@11.50	11.50@12.00	4.34%
Kasai, black.....	14.00@14.37	13.25@13.75	4.34%
Equateur, Ikembu, Lo			
pori, etc.....	14.75@15.00	13.25@13.75	8.33%
Upper Congo, ordinary....	13.25@13.50	12.25@12.67	6.11%
Aruwimi Uelé	13.25@13.50	12.50@13.00	3.70%
Mongala strips.....	13.25@13.50	12.50@13.00	3.70%
Red thimbles (root rub			
ber)	9.00@9.75	10.25@10.75	10.82%
b Para fine	7s. 2d.@7s. 6d.	5s. 9d.@5s. 9½d.	22.77%

[Decrease.]

[* In English money, per pound.]

[† Ten francs per kilogram = 87½ cents per pound.]

Our Esteemed Japanese Contemporary

THE enterprise displayed by the Japanese in the india-rubber industry, and the progress made in its development, though of such recent origin in their country, is indicated in the well filled columns of our excellent contemporary *Gomu Shimpo* ("India Rubber News" or "Gazette"), edited and published monthly in Tokio by Mr. T. Takeuchi, with Mr. T. Sato as associate. Judging from the substantial appearance of the *Shimpo* it must enjoy a good support, but however extensive its circulation the paper probably is not seen by many readers of THE INDIA RUBBER WORLD, for whose benefit is reproduced on this page the headpiece of the Tokio publication.

The leading article in the issue of *Gomu Shimpo* for November 10, 1910, is an editorial on india-rubber cultivation, a subject which appeals to the interest of the Japanese, not only in connection with the future supply of raw material required by them, but also because they entertain hopes of cultivating rubber profitably on the island of Formosa, now owned by Japan. There are further articles on "The Most Recent Discovery Relating to Rubber Plantations," "The South China Bank in Rela-

very pronounced. Taking up at random an early number of this pioneer American journal, one finds only about 42 per cent. of its reading matter devoted to rubber and allied subjects, and a good part of this was filled with a chapter in an excellent history of Charles Goodyear, which the editor compiled and published serially. Other articles in this pioneer rubber journal related to sea sickness, tippling in Ireland, fairies in Great Britain, and the like, together with jokes and poems. The new Japanese paper, it will be seen, is doing somewhat better.

And the early New York paper had only 16 advertisements of rubber manufacturers and dealers in factory supplies, though there were over a hundred rubber factories in the United States at the time, with millions of capital invested and many millions of dollars' worth of products.

Speaking of advertisements, *Gomu Shimpo* makes a good showing for the Japanese rubber industry. There are 28 advertisements in the number under review, all bearing in some way upon the rubber interest. There are announcements both of manufacturers and importers, some offering rubber goods in general



HEADPIECE OF THE GOMU SHIMPO (INDIA RUBBER NEWS), TOKIO, JAPAN.

tion to Rubber" (having reference to planting investments), "The Hongkong Rubber Revolution," and notes on Malaysian and other planting company dividends.

There are articles on two or three Japanese rubber manufacturing companies; statistics of imports at different ports of india-rubber and gutta-percha; the prices of crude rubber, and such like information. One article is headed "Koma Agricultural College and Rubber." Celluloid also receives attention, first in a statistical article, and secondly in a review of the celluloid industry in Germany.

The coming International Rubber Exhibition in London receives attention, and there are articles on the automobile industry in the United States and on the amount of capital invested in the rubber industry in the world. The leading technical article is devoted to "Compounding Rubber." The remaining title is "Pedals for Bicycles."

It will be seen from this brief summary that the editors of *Gomu Shimpo*, in the allotment of their space, have adhered pretty closely to their text. Here we recall that when THE INDIA RUBBER WORLD was being founded there were members of the trade who feared that early failure would result from the inability of the editor to find enough matter pertaining to rubber to fill the paper. And the success of the first journal ever published in the trade—*The Rubber Era*, of New York, forty years ago—in getting together matter bearing upon rubber was not

and others confining themselves to specialties. The advertisements relate to mechanical goods, druggists' sundries, tires, toys, shoes, balloons, crude rubber, and substitutes. Particular attention is given to jinriksha tires. Two firms mention waste rubber. There is, in fact, no general class of rubber goods not mentioned in these advertisements, with the exception of waterproof clothing. One of the advertisers, by the way, is the Japanese Ingram Rubber Co., a branch of an important English concern established recently at Kobe, for the manufacture of medical and surgical supplies, including gloves and nipples. We notice an announcement also of the British "Murac."

well filled columns of our excellent contemporary, *Gomu*

With this excellent material in such goodly quantity to start with and the promise of industrial progress that characterizes modern Japan, there seems to be no reason why *Gomu Shimpo* should not attain an importance, a magnitude, and a circulation in keeping with the present condition and future growth of the rubber industry in Japan. That there is room and plenty of opportunity for the industry is attested by the present importance and diversity of Japan's manufacturing interests; also by the steady spread of modern culture among her people. These factors mean an increased demand for rubber goods and a wide field for our esteemed far-eastern contemporary.

Our congratulations to *Gomu Shimpo* and to the trade which it so worthily represents!

The Rubber Trade at Akron, Ohio.

By a Resident Correspondent.

COMPANY MEETINGS.

AT the annual meeting of shareholders of the B. F. Goodrich Co., on January 18, the reports presented showed that the volume of business transacted during 1910 exceeded that for any previous year. The outlook for this year is said to be exceedingly satisfactory. No announcement of additional buildings this year was made, but the company will build extensions to the factory as necessary, as they did during the past year, when several large structures were erected. The directors were reelected—George T. Perkins, George W. Crouse, B. G. Work, F. H. Mason, H. E. Raymond, E. C. Shaw and C. C. Goodrich. The board reorganized and elected officers as follows.

President—BERTRAM G. WORK.
First Vice-President—FRANK H. MASON.
Second Vice-President—H. E. RAYMOND.
Secretary and Assistant Treasurer—CHARLES B. RAYMOND.
Treasurer and Assistant Secretary—WILLIAM A. MEANS (succeeding Walter A. Folger).
General Manager of Works—E. C. SHAW.

Arthur P. Lumsden, of Akron, will be general manager of the French works of the Goodrich company, near Paris, which will be put in operation this year for the manufacture of the company's tires for the European market.

The shareholders of the Swinehart Tire and Rubber Co. met on January 16. The statement for the year 1910 shows a very substantial growth, the sales amounting to \$820,000, compared with \$139,000, the actual amount of business done during the previous year. The prospect for 1911 is that a very large increase will be made in the business of the company. The regular quarterly dividend of 2 per cent. was declared. The directors chosen were: W. W. Wuchter, Joseph Dangel, R. A. May, Frank B. Theiss, William A. Byrider, C. O. Baughman, August Blessman, and W. E. Wright. The three last named are new members of the board; James A. Swinehart and Frank R. Talbot retire. The officers elected are:

President and General Manager—W. W. WUCHTER.
Vice-President—JOSEPH DANGEL (succeeding James A. Swinehart).
Secretary—C. O. BAUGHMAN.
Treasurer—R. A. MAY.

The Swinehart company have established new distributing points with The Keaton Vulcanizing Co., San Francisco; The Terminal Taxicab Co., No. 2131 Twentieth street, N. W., Washington, D. C.; and the Empire State General Vehicle Co., Rochester, New York.

The Portage Rubber Co., incorporated under the laws of Ohio, have increased their capital stock from \$10,000 to \$1,000,000. The United Rubber Co., of Barberton, with a reclaiming plant in operation have been merged with the company. The following list of officers comprises also the board of directors:

President—H. C. HAGELBARGER.
Vice-President—HOWARD KENDEL.
Secretary—G. H. DOGLITTLE.
Treasurer—A. S. MOTTINGER.

W. W. Wildman, who was general manager of the United Rubber Co., is now general manager of the Portage company. They intend to engage in the manufacture of rubber goods generally, and to locate a new plant in or about Akron.

The annual meeting of shareholders of the Royal Rubber Co. was held on January 18, when the following directors were chosen: W. M. Blecker, Frank A. Wilcox, James E. Whigham, J. C. Gibson and J. A. H. Myers. The officers elected are:

President—W. M. BLECKER.
Vice-President—FRANK A. WILCOX.
Secretary—J. A. H. MYERS.
Treasurer—J. E. WHIGHAM.
General Manager—J. C. GIBSON.

The Royal company have bought out the Milford Rubber

Works (Milford, Illinois), the equipment of which is to be removed to Akron and added to their plant there. The Royal company are capitalized at \$200,000, and will add solid and pneumatic tires to their production of mechanical goods.

The Federal Waterproofing Co., lately organized at St. Joseph, Missouri, have removed to Akron, and secured factory space from the Goodyear Tire and Rubber Co., which they will occupy until a new building can be erected. The directors are: L. C. Rockhill, G. W. Rogers, H. H. McClosky, H. S. Bryan, and W. S. Hendrick. The officers are:

President—L. C. ROCKHILL.
Vice-President—G. W. ROGERS.
Secretary and Treasurer—H. H. MCCLOSKY.

Charles C. Measure, for three years past manager of the New York branch of the Goodyear Tire and Rubber Co., has been appointed general manager of the company.

INCREASING BUSINESS.

THE Miller Rubber Co. report an increase in business for the past year of 125 per cent. Their productive capacity was nearly doubled during the year. The latest addition to their plant has been a new press department. Their quarterly dividend of 2½ per cent. was announced on January 10. They have placed on the market a novel non-skid tire, in connection with which Mr. W. F. Pfeiffer, treasurer of the company, attended the automobile shows at New York.

The Alkali Rubber Co. during the year past have doubled their factory, both in size and capacity. They have constructed a three-story mill building of reinforced concrete, 75 x 231 feet; a two-story grinding building of concrete, 55 x 216 feet; a new brick and steel power house, 50 x 180 feet; a concrete converting building, 60 x 150 feet; a two-story concrete boiling building, and an assorting house of concrete, 18 x 240 feet, together with new yards 325 x 120 feet, and crane service. The new power house is equipped with a 1750 H.P. Hamilton-Corliss engine, and generators.

The Buckeye Rubber Co. (the Akron branch of the Consolidated Rubber Tire Co.) have almost trebled their volume of business within a year, having increased their capacity proportionately. They contemplate building this summer a two-story brick addition, 60 x 120 feet.

The Stein Double Cushion Tire Co. report a constant increase of output, to accommodate which they will be compelled to build an addition to their factory this summer.

The Lyons Rubber Co., since their fire, have rebuilt a three-story brick building, 50 x 70 feet. They have added to the manufacture of drug sundries a line of pneumatic tires. O. G. Lyons is general manager, and A. A. Peterson has charge of the tire department.

The Faultless Rubber Co., of Ashland, have nearly completed a large and modern office building which they expect to occupy by March 1.

A FEW NOTES.

JOHN J. MORIARTY, formerly a chemist with the B. F. Goodrich Co., has been appointed factory superintendent by the Goodyear Tire and Rubber Co. of Canada, Limited, at Bowmanville. He recently resigned the position of superintendent of the Pennsylvania Rubber Co. (Jeannette, Pennsylvania), to go to the Canadian factory.

The rubber manufacturers of Akron claim that 65 per cent. of all the cars exhibited at the Madison Square automobile show in New York were equipped with their tires.

THE RUBBER TRADE AT TRENTON.

BY A RESIDENT CORRESPONDENT.

AT a recent meeting of the Thermoid Rubber Co., New York, Messrs. Robert J. Stokes and Fred S. Wilson were elected directors of the company at a subsequent directors' meeting, Mr. Stokes was elected secretary and Mr. Wilson vice-president of the company. Both gentlemen are well qualified to be of practical service to the corporation in their respective positions. Mr. Stokes, who is the son of W. J. B. Stokes, who has large rubber interests in Trenton, and who has five uncles prominently identified with the rubber business, spent his summer vacations, as a boy, in one of the plants with which his father was connected, and later, entering Princeton University, took up chemistry as his special study. On graduating, in 1904, he went into the rubber business, taking a practical course that began at the bench. He gradually rose by steady promotion until he attained his present rank as secretary and superintendent of the plant. Mr. Wilson entered the employ of the Messrs. Stokes about seventeen years ago, and after some three years in the mill, went over to the sales force for several years. He has had full charge of the company's automobile goods department and has at different times filled the position of sales manager and advertising manager, the company being notably heavy advertisers. From one of the smallest concerns, the Thermoid Rubber Co. has grown into one of the largest rubber manufacturing corporations in the East, and as to some of its lines enjoys a world-wide reputation. It has branches in New York City, Boston, Philadelphia, Pittsburg, St. Louis, Detroit and San Francisco, and London, England. Its principal lines are mechanical rubber goods, automobile tires, tubes and brake lining. The present officers of the company are as follows:

President—J. O. STOKES.
Vice President—F. S. WILSON.
Treasurer—W. J. B. STOKES.
Secretary—R. J. STOKES.

Charles Y. Flanders, general sales agent of the United and Globe Rubber Manufacturing Co., Trenton, New Jersey, who recently suffered an attack of acute indigestion while riding on a train and was taken to the Mercer Hospital, is now reported to have completely recovered.

George R. Cook, of the Hamilton Rubber Manufacturing Co., is wintering with his family at Court Inn, Camden, South Carolina, at which place they have been for several seasons past. Mr. William H. Service, of the same company, recently left for a vacation which he will spend in Florida.

Karl G. Roebeling, general sales manager of the John A. Roebeling Sons Co., left for a trip to Honolulu the last of January.

Katzenback & Bullock Co., importers of manufacturers' supplies, have opened storehouses from which to make quick deliveries at Trenton, Philadelphia, New York, and Montreal.

General C. Edward Murray and Mr. C. H. Semple, of the Empire Tire Co., will personally attend the Chicago Automobile Show, where the company will have an attractive exhibit.

Watson H. Linburg, president of the United and Globe Rubber Manufacturing Co., recently left for Palm Beach, where he expects to spend some time.

The Leicester Rubber Co. are now occupying their new plant at the foot of Paul and Perrine avenues. This company manufacture door mats, mats for automobiles, and are equipping to make other molded goods and to reclaim.

Whitehead Brothers, Rubber Manufacturing Co. have recently erected a two-story brick office building on the site of the old Whitehead homestead. The new offices are handsomely appointed and equipped with every convenience.

A BOOK for rubber planters—Mr. Pearson's "What I Saw in the Tropics."

THE RUBBER TRADE IN SAN FRANCISCO.

BY A RESIDENT CORRESPONDENT.

THE Gorham-Revere Rubber Co. is a new California corporation recently organized to take over the business of the Gorham Rubber Co., of San Francisco, and that of the Revere Rubber Co. on the Pacific coast. The headquarters will be in San Francisco, and in each city on the coast in which these separate firms have had branches the business is to be conducted in future under one roof. The list includes Seattle and Spokane, Washington; Portland, Oregon; and Los Angeles and Oakland, California. The officers are

President—William J. Gorham
Vice President—Charles C. Case.
Treasurer—W. R. Pierce
Secretary and Assistant Treasurer—W. B. Heckmann.

The president of the new company was the founder, fifteen years ago, of the business which has grown into the Gorham Rubber Co., of which he has been president. The treasurer, Mr. Pierce, has been the manager of the local branch of the Revere Rubber Co. Mr. Case, the vice president, is the vice president of the Revere Rubber Co., a Rhode Island corporation, and Mr. W. B. Heckman, secretary and assistant treasurer, was the secretary of the Gorham Rubber Co. prior to the amalgamation.

The year has opened up favorably with the rubber houses, the principal feature of the opening days having been a good long rain, which was general throughout the entire state. Prior to that, for many weeks, there had not been a drop of rain. It is said to have been the longest period at that time of the year without rain that has been known here, and the fall business was unquestionably interfered with. Fortunately the dry spell did not continue for a period long enough to interfere with the crops of the coming season. The rains have allayed the fears of the farmers, and have restored confidence to those who feared a dry season. The storms have also helped the retailers to dispose of goods which they had feared they might have to carry over to another year.

The B. F. Goodrich Co. has opened its store at No. 341-347 Market street. The company has also established quarters at No. 556-560 Golden Gate avenue, which store they propose to devote to the handling of local automobile trade. It is under the management of Mr. A. W. Ralph.

Electric Hose & Rubber Co., which has been represented for the past two years by Mr. F. C. Anderson, who conducted business under his own name, has moved to No. 562 Howard street, and will hereafter operate under the name of the company, of which Mr. F. C. Anderson will continue the management. The former location was at No. 422 Mission street.

The Association of the Rubber Merchants of San Francisco held its regular monthly banquet last week at the Palace Hotel. An elaborate menu was enjoyed, and the meeting was presided over by Mr. W. R. Pierce.

The Gutta Percha & Rubber Manufacturing Co. will soon occupy its new quarters on Fremont street.

The George A. Sheehan Co., Coast representatives of the Davol Rubber Co., of Providence, R. I., report that last year's business shows a substantial increase over that of the year preceding. This company has recently taken the agency of the Hygeia nursing bottle, manufactured in Buffalo, which has proved to be a popular account.

A LAW SUIT OVER PROFITS FROM an artificial rubber scheme is reported from Boston. Why doesn't the plaintiff save himself trouble by producing enough artificial money to supply all his wants?

THERE MUST BE MORE INVOLVED in rubber planting in Ceylon than is dreamed of in the philosophy of the Western world. Else how could one find in a matter of fact newspaper a mention of a "Kanakapulle" sleeping inside a rubber factory at Gampola?

THE OBITUARY RECORD.

JOSEPH T. HART

JOSEPH THOMAS HART died on December 28 at the Lakewood Hospital, in Cleveland, Ohio, a few days after undergoing an operation for a malady from which he had suffered for about two years, though it had not prevented his attention to his duties as superintendent of the footwear department of The Diamond Rubber Co. (Akron, Ohio).

Mr. Hart was born in Liverpool, England, October 18, 1869, being the son of George Hart, who was connected with the rubber industry there, and who came to America with his family three years later. George Hart, after being connected with the Good-year Glove company at Naugatuck, became factory superintendent of the Lycoming Rubber Co., at Williamsport, Pennsylvania.



JOSEPH THOMAS HART

Joseph T. Hart began his work in rubber at the age of 16, under his father, at the Lycoming factory, in which he achieved such efficiency as to enable him to accept the position of superintendent of the boot and shoe department of the Canadian Rubber Co. of Montreal. Afterward he went into the last business at Granby, Quebec, and then was factory superintendent of the Merchants Rubber Co. at Berlin, Ontario. Three years ago he became general manager of the La Crosse Rubber Mills Co. (La Crosse, Wisconsin), which position he left in August, 1909, to organize the footwear department of The Diamond Rubber Co. Mr. Hart was an able and practical footwear manufacturer and had many friends in the trade.

Mr. Hart married Miss Margaret Annie Stewart, June 24, 1903, while living in Montreal, who survives together with a son, by his first wife. His remains were interred at Williamsport.

PAUL MORTON.

PAUL MORTON died suddenly in New York on January 19, in his fifty-fourth year. He was the son of a Cabinet minister, and himself became secretary of the navy of the United States after a brilliant career as a railroad president. At his death he was president of the Equitable Life Assurance Society, of New York, which position he had filled for more than five years. He was a director of the Intercontinental Rubber Co., and chairman of the executive committee.

THEODORE J. ACKERMAN.

Theodore J. Ackerman, formerly engaged in business as a manufacturer of rubber goods, died at his home in New Haven, Connecticut, on January 8, after a brief illness, in the ninetyeth

year of his age. One of New Haven's oldest residents, the son of Jonathan C. Ackerman, one of the original directors of the Pennsylvania Railroad, deceased, was born in New Brunswick, New Jersey, and settled in New Haven in 1872; with his brother, Warren Ackerman, he was engaged in the drug business in New York at the time of the Civil War, when his brother obtained a patent on a rubber blanket that came into extensive use with the soldiers in the field. Three factories were kept busy supplying the demand for them, and of one of these, located at Naugatuck, Connecticut, the deceased had charge. After the war the demand for the blankets ceased, and Mr. Ackerman engaged in other business, from which for several years before his death he had retired. A widow and daughter survive him.

ROBERT WINDER JOHNSON.

Robert Winder Johnson, senior member of the long-established Philadelphia firm of Laurence Johnson & Co., who have figured in an important way in the crude rubber trade, died on December 28. The business will be continued under the same style by Antonio Sans, Lawrence J. Morris, Russell H. Johnson, Lawrence Johnson, Jr., all surviving members of the former firm, and Morris Winder Johnson.

CHARLES F. BAKER.

It is with regret that we have learned, just prior to going to press, of the death of Charles F. Baker, of the Baker Rubber Cement Co., Incorporated, of 50 Lincoln street, Boston. The deceased was recognized as a man of many sterling qualities, who enjoyed the confidence and respect of all who knew him.

INDIA-RUBBER GOODS IN COMMERCE.

EXPORTS FROM THE UNITED STATES.

OFFICIAL statement of the values of exports of manufactures of india-rubber and gutta-percha for the month of November, 1910, and for the first eleven months of five calendar years:

MONTHS.	Belting, Packing and hose.	Boots and Shoes.	All Other Rubber.	TOTAL.
November, 1910	\$159,021	\$187,055	\$506,407	\$852,483
January-October	1,759,590	1,906,961	4,687,399	8,353,950
Total, 1910.....	\$1,918,611	\$2,094,016	\$5,193,806	\$9,206,433
Total, 1909.....	1,637,018	1,474,559	3,978,186	7,089,763
Total, 1908.....	1,131,272	1,224,799	3,255,507	5,611,578
Total, 1907.....	1,294,460	1,532,595	3,643,744	6,470,799
Total, 1906.....	1,083,228	1,137,445	2,993,804	5,214,477

The above heading "All Other Rubber," for the last five months includes the following details relating to Tires:

MONTHS.	For Automobiles.	All Other.	TOTAL.
July	\$146,080	\$56,096	\$202,176
August	151,468	71,486	222,954
September	133,735	39,457	173,192
October	103,788	33,469	137,257
November	160,214	37,962	198,176

FOLLOWING THE EXAMPLE OF MANY other large cities throughout the country in adopting self-propelled apparatus for extinguishing fires, the New York fire department will have to be reckoned with in the future as a factor in the rubber market. Rubber tires, of special make and size, will be required for its ponderous vehicles, while at the speed with which they travel over pavements not always of the best, which with the possibilities of the automobile will be greatly accelerated—the pneumatic tires will be subject to tremendous stress and wear. Taken together with the rubber that enters into the rubber lined hose, the department uses in such large quantities, it will readily be seen that the protection of New York from the fire fiend is going to help boom the price of this commodity, the supply of which is short enough as it is.

News of the American Rubber Trade.

THE NEW REVERE RUBBER COMPANY.

THE \$4,000,000 corporation which has just been formed under the laws of Rhode Island, under the name Revere Rubber Co., has for its purpose the taking over of the business of the long established Massachusetts corporation of the same name. It is a step toward the closer consolidation of the old company with the United States Rubber Co., which acquired control of it in January, 1910, by paying \$4,000,000 for the capital stock of the Revere—\$2,000,000 at par. Elisha S. Williams, general manager of the Revere company, was at once elected president of the Rubber Goods Manufacturing Co., a subsidiary of the United States company, and several members of the board of the latter were elected directors of the Revere company.

The next important announcement in this connection was that the plant of the Joseph Banigan Rubber Co., at Olneyville, Rhode Island—also owned by the United States Rubber Co., but not at the time in operation—was being put into shape for taking care of an important part of the production of the Revere Rubber Co. The Olneyville factory has also been considerably enlarged.

Following the incorporation of the Revere Rubber Co. in Rhode Island, on December 19, a temporary organization was effected. A few days later the following were elected directors: Elisha S. Williams, Charles C. Case, William H. Gleason, Samuel P. Colt, James B. Ford, Harry E. Converse, and Homer E. Sawyer. The officers elected are:

President—ELISHA S. WILLIAMS.
Vice President—CHARLES C. CASE.
Treasurer and Secretary—WILLIAM H. GLEASON.
Assistant Treasurer and Assistant Secretary—JOHN D. CARRBERRY.

BISHOP GUTTA-PERCHA CO.—ANNUAL.

At the annual meeting of the shareholders of the Bishop Gutta-Percha Co., held at the office of the company in New York on January 18, the following directors were elected: Henry A. Reed, W. Boardman Reed, Henry D. Reed, Louis F. Reed, and E. I. Anderson. The board then reelected the officers, as follows:

President—HENRY A. REED.
Vice President—HENRY D. REED.
Treasurer—W. BOARDMAN REED.
Secretary—LOUIS F. REED.

MARION INSULATED WIRE AND CABLE CO.—ANNUAL.

At the annual meeting of the Marion Insulated Wire and Rubber Co., held at their main office at Marion, Indiana, on January 17, the following directors were elected: J. L. Barley, Robert J. Spencer, John Prior, L. C. Lillard, C. E. Van Vactor, M. F. Cartland and R. E. Lucas. The board then elected officers as follows:

President—J. L. BARLEY.
Vice President—ROBERT J. SPENCER.
Treasurer—HIRSH BISHORI.
Secretary and General Manager—R. E. LUCAS.

Plans were adopted by the board for an additional building 66 x 50 feet, three stories and basement, to be used for the shipping and braiding departments.

RUBBER MANUFACTURERS MUTUAL INSURANCE CO.—ANNUAL.

The annual statement of the Rubber Manufacturers' Mutual Insurance Co. (Boston, Mass.), covering the year ending December 31, 1910, shows that the company had at risk on that date \$53,862,581. The company's total income during the year amounted to \$483,061.96, of which \$465,229.69 was received in the shape of premiums. Including \$2,760.37 paid for sprinkler leakage losses, the company paid in losses during the twelve months, \$23,162.29, and returned in deposit premiums to policyholders \$389,325.45, equivalent to an average of 88 per cent., as compared with 85 per cent. returned for the year 1909. The company's assets, at the close of the year, amounted to \$445,048.58, the total liabilities including unadjusted losses and unearned pre-

miums on outstanding risks, were \$242,102.23, leaving a surplus of \$222,946.35. The cash assets of the company available for the payment of losses amounted to \$455,437.79; the company's assessment liability to \$2,324,914.40. The company has for directors Arthur H. Lowe, Fitchburg, Mass.; E. B. Page, Winchester, Mass.; George H. Hood, Boston, Mass.; Marcus Beebe, Malden, Mass.; Robert Batcheller, Boston, Mass.; C. C. Converse, Boston, Mass.; E. H. Clapp, Boston, Mass.; F. W. Pitcher, Easthampton, Mass.; W. B. Plunkett, Adams, Mass.; C. E. Stevens, Ware, Mass.; E. S. Williams, New York, N. Y.; George B. Hodgman, New York; C. T. Plunkett, Adams, Mass.; B. G. Work, Akron, Ohio, and Benjamin Taft, Ayer Mass. The company's officers are:

President—ARTHUR H. LOWE.
Vice President—E. B. PAGE.
Secretary and Treasurer—BENJAMIN TAFT.
Local Secretary—E. S. WILLIAMS. W. B. BROPHY.

HODGMAN RUBBER CO.—ANNUAL.

At the annual meeting of the Hodgman Rubber Company, New York, held on January 19, the following directors were elected: G. B. Hodgman, S. T. Hodgman, F. A. Hodgman, N. E. Stout and A. W. Warren. The officers elected were as follows:

President—G. B. HODGMAN.
Vice President—F. A. HODGMAN.
Treasurer—S. T. HODGMAN.
Secretary—A. W. WARREN.

L. AND M. RUBBER CO.—ANNUAL.

The L. & M. Rubber Co. (Carrollton, Ohio) have changed their name to the Miller Tire and Rubber Co. They will continue the manufacture of druggists' sundries, and are taking on automobile tires and tubes. The officers are:

President and Treasurer—A. E. BUTLER, of Chicago.
Vice-President—D. S. HARDING, of Chicago.
Secretary—J. H. RICHARDS, of Carrollton.
Manager—A. J. RICHARDS, of Carrollton.
Superintendent—L. MILLER, of Carrollton.

THE REPUBLIC RUBBER CO.—ANNUAL.

The seventh annual meeting of the Republic Rubber Co. (Youngstown, Ohio) was held on January 23. The officers were reelected, as follows:

Chairman of Board of Directors—THOMAS L. ROBINSON.
President—J. F. MCGUIRE.
Vice Presidents—L. J. LOMASNEY and L. T. PETERSON.
Treasurer—M. I. ARMS, 2.
Secretary—C. E. GARRISON.

The new building for the manufacture of balata belting by the Republic company is now practically completed, and they will put on the market, within the next few weeks, "Lanco" balata belts of their own make.

RUBBER AND CELLULOID HARNESS TRIMMING CO.—ANNUAL.

At the annual meeting of the Rubber and Celluloid Harness Trimming Co., Newark, N. J., held on January 10, directors were elected, as follows: Andrew Albright, Jr., E. A. Spurr, Mathew Dunlap, David Lockwood, Thomas Kays and Edward G. Robertson. The company reports a prosperous year's business, in spite of a disastrous fire in September last. Officers were elected by the board as follows:

President—ANDREW ALBRIGHT, JR.
Vice President—E. A. SPURR.
Secretary—THOMAS KAYS.
Treasurer—EDWARD G. ROBERTSON.

MULCONROY EMPLOYEES ENTERTAINED.

AN enjoyable banquet was given on December 29 by Mulconroy Company, Inc., dealers in rubber goods (Philadelphia), at Kuglers in that city, to their numerous employees, in recognition of their loyalty and fidelity, Mr. James J. Mulconroy, president of the company, presiding. An elaborate menu card had been prepared as a souvenir of the occasion, and to each member of the party there was handed, at the close of the repast, a surprise package. Each package was found to contain a lemon; but the largest and juiciest was in the package that was handed

to Mr. Mulconroy. Beautiful floral decorations and tuneful music added to the enjoyable character of the gathering. Among those present were: James J. Mulconroy, president; George J. Holden, secretary; Edwin S. Morris, treasurer; Howard R. Peterman, salesman; S. E. Lineweaver, salesman; Fred R. Mackrell, shipper; Hugh K. Anderson, factory foreman

REPUBLIC COMPANY TO MAKE BALATA BELTING.

FOR some time past the Republic Rubber Co., of Youngstown, O., have been selling, in increasing quantities in the United States, Lanco Genuine Balata Belting, manufactured by an English concern, and for which, in spite of the heavy duty imposed on it under the United States tariff, they found a large sale, owing to its adaptability to American methods of operation and climatic conditions. Lanco Genuine Balata Belting, is said to be the strongest in existence, the makers claiming for it a tensile breaking strain of 9,000 pounds per square inch, which, with its water-proof, durable and non-stretching properties, adapt it particularly for severe conditions of service.

By virtue of associations entered into with the English manufacturers, some time ago, the Republic Rubber Co. have arranged with them for the installation, in this country, of a plant for the manufacture of this belting and the establishment, which has been built and equipped, under the direct supervision of the English company, is now completed and in operation.

Furnished with machinery, etc., of the most modern character and thoroughly up-to-date devices for handling a large output; the factory will be able to turn out belting to the value of more than \$1,000,000 per annum, while suitable storage space will be provided for upwards of 2,000,000 feet of the finished article. The balata belting made at Youngstown will be of the highest standard quality and made under the secret impregnation process which is the exclusive property of the English company, and the sole right to which, in the United States and Mexico, with other protected processes, the trade marks, copyrights, etc., of the English company, the Republic Rubber Co. have required.

Lanco Balata Belting is already handled in the United States by a large number of jobbers, and the Republic Rubber Co. will push its sale actively, under the management of Mr. W. R. Goudie, who comes from England to take charge of the selling arrangements. It may be added that the reduction in price, made possible by the saving of the tariff, will enable the manufacturers to sell Lanco Belting at about the price of high-grade rubber belting, and very much cheaper than leather belting, so that it should eventually find extensive sale in the United States.

THE VOORHEES "OLD GUARD."

IN these days of conflict between employer and employé, when the press is full of accounts of strikes with and without cause, it is rather refreshing to find a case where the relations between the worker and the employer have continued amicable for a quarter of a century.

Every one in the rubber trade recognizes in John J. Voorhees, the president of the Voorhees Rubber Manufacturing Co. (Jersey City, New Jersey) one of the pioneers in the mechanical rubber goods industry, but not every one knows of the veterans he has with him—men who have been associated with him for the greater part of his business life.

The Voorhees company have a goodly number of men with terms of service of over ten years, but the record of this "Old Guard," as it is appropriately termed, is phenomenal.

It would seem unquestionable that in a business that is so complicated, so troublesome in detail as is the manufacture of rubber goods, the experience of a body of intelligent men such as these, must count for much, and prove a valuable adjunct to the concern where they are employed.

The illustration which accompanies this article shows eleven

men who have been actively engaged in the rubber business with Mr. Voorhees for an aggregate of 283 years, or an average for each man for 25 7/11 years. Their terms of service range from 21 to 31 years. These men are now heads of departments, engineers, master mechanics—in a word, the supervising force of a well regulated factory.

The names of the men and positions they occupy in the works, beginning at the left of the top line, are as follows: Ernest Converse, in charge of shipping department; Warren W. Ainsworth, master mechanic; (The Old Man), Dennis Mulqueaney, mill



man; Albert L. Wilson, shipping department; Charles Eichman, foreman belt department; Louis B. Pugsley, chief engineer; Edward Walsh, foreman hose department; Nicholas Weisman, foreman sundry department. Front row, left to right: Edwin J. Jones, foreman mill rooms; John Eisman, dean of calender men; Albert Eggs, head platen man.

THE "OLD GUARD"

We, the undersigned, have been actively engaged in the rubber manufacturing business with Mr. John J. Voorhees, for the terms of service set opposite our respective names.

NAME OF VETERAN	TERM OF SERVICE
Warren W. Ainsworth	25 YEARS
Ernest W. Converse	25 "
Albert Eggs	22 "
Charles Eichmann	22 "
John Eisman	30 "
Edwin J. Jones	25 "
Dennis Mulqueaney	31 "
Louis B. Pugsley	29 "
Edward Walsh	29 "
Nicholas Weismann	21 "
Albert L. Wilson	23 "
Total Years, 282	
Average Term of Service	25 7/11 Years

OWNERS OF THE UNITED STATES RUBBER CO.

THE number of shareholders in the United States Rubber Co., on October 31, 1910—having reference to all classes of the company's issues, was 8,248, against 6,464 one year previously, according to a table compiled by the *New York Journal of Commerce*. The total capitalization of the company being now \$75,000,000, the average holdings work out at \$9,100 *per capita*.

The broad conclusion prompted by the records kept by the *Journal* for a series of years is that the capital of our large corporations is gradually being absorbed by citizens not usually classed as capitalists. More and more the savings of the public are being invested in corporate securities.

CHANGE OF SUPERINTENDENTS AT READING.

HUGH A. NEWELL has retired from the position of superintendent of the Reading Rubber Manufacturing Co. (Reading, Massachusetts), after having given 21 years to the up-building of the company's business, and an annuity has been settled upon him by the company. On the afternoon of December 31 Mr. Newell was surprised by being called into the shipping room of the factory, where he found a large number of the employes assembled, and where he was greeted with a speech expressing their appreciation of him, followed by the presentation of a gold headed cane. Mr. John Hope, well, president of the company, had come out from Boston to be present at this little ceremony, and made a speech testifying to the merit of the retiring superintendent, and asking that the force show to the new superintendent the same loyalty that they had manifested toward the old. Mr. Newell is succeeded by Everett A. Skinner, who has had charge of the shipping department for 20 years, his duties gradually embracing other details as the business developed, until he has become conversant with the work of all departments.

FIRE HOSE FOR NEW YORK CITY.

THE fire hose mentioned in the New York newspapers at the beginning of the year as having been purchased for the city—60,000 feet, from The B. F. Goodrich Co. of New York—was the same that had been reported earlier [see *I R W* October 1, 1910, page 31], the later report having resulted from the completion of the contract.

MR. RICE GOES TO PORT DALHOUSIE.

JOSEPH M. RICE has resigned as superintendent of the boot and shoe department of the Apsley Rubber Co. (Hudson, Massachusetts), after having filled the place since the creation of this department, some eleven years ago. Mr. Rice had previously

been at the plant of the National India Rubber Co. He has now gone to Canada as factory superintendent of The Maple Leaf Rubber Co., Limited, at Port Dalhousie. Mr. Rice owns a home at Hudson, where his family will remain for the present.

NEW WATERPROOF CLOTHING COMPANY.

THE London Waterproof Co., of No. 55 East Eleventh street, New York, the incorporation of which has been mentioned [see *I R W* January 1, 1911, page 137] has been organized for the manufacture of a popular price line of men's and women's waterproof clothing, with offices and salesroom at the address above given, and a factory in Manchester, England. The company is composed of Louis Wener, who has been identified with the rubberproofing business for 15 years past, and Julius Roggen and Sol. Roggen.

CHANGE AT HARMER RUBBER RECLAIMING WORKS.

THE interest in Harmer Rubber Reclaiming Works (East Millstone, New Jersey) owned by H. A. Rosenthal and J. Gordon has been purchased by A. Marcus and I. Laurie, who were already connected with the corporation. The business is now controlled by the two gentlemen last named and Thomas W. Harmer. At the annual election on January 10, 1911, Thomas W. Harmer was reelected president and A. Marcus secretary and treasurer. I. Laurie was elected vice-president. The Harmer Rubber Reclaiming Works have been making constant headway since first beginning business and during most of the time have found night work necessary. Lately they have put in two additional mills, enabling them to greatly increase their output. They are making special grades of reclaimed rubber for mechanical goods and

insulated wire. They are making white and red grades, to which they call special attention.

THE SHOE TRADE AT LYNCHBURG.

THE merger of the two large shoe manufacturing firms at Lynchburg, Virginia [see *I R W*, December 1, 1910, page 99] went into effect at the beginning of the year. In connection with acquiring control of the George D. Witt Shoe Co., the Craddock-Terry Co., have increased their capital to \$1,500,000. The factories of the George D. Witt Co. will continue to be operated under the old name; T. M. Terry is the new president of this company, succeeding Mr. Witt.

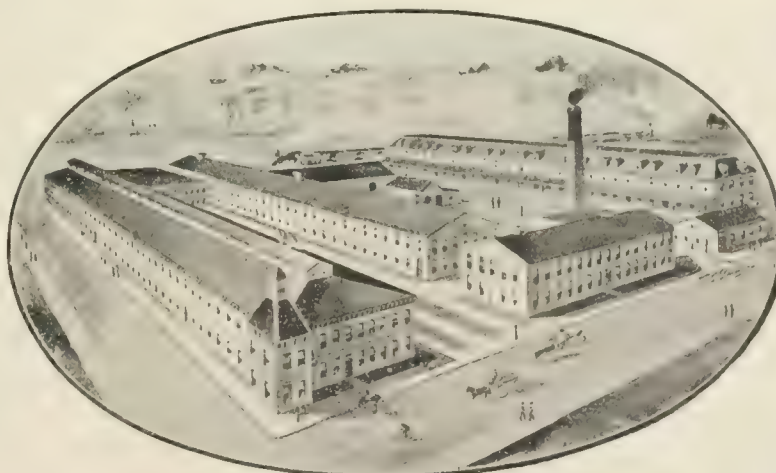
HEADQUARTERS OF A RUBBER COMPANY.

THE general offices of the United States Rubber Co. (No. 42 Broadway, New York) are located in one of the largest buildings in the world. It is 21 stories high, with a frontage of

FACTORIES OF THE APSLEY RUBBER CO.



THE ORIGINAL PLANT, TWENTY-FIVE YEARS AGO.



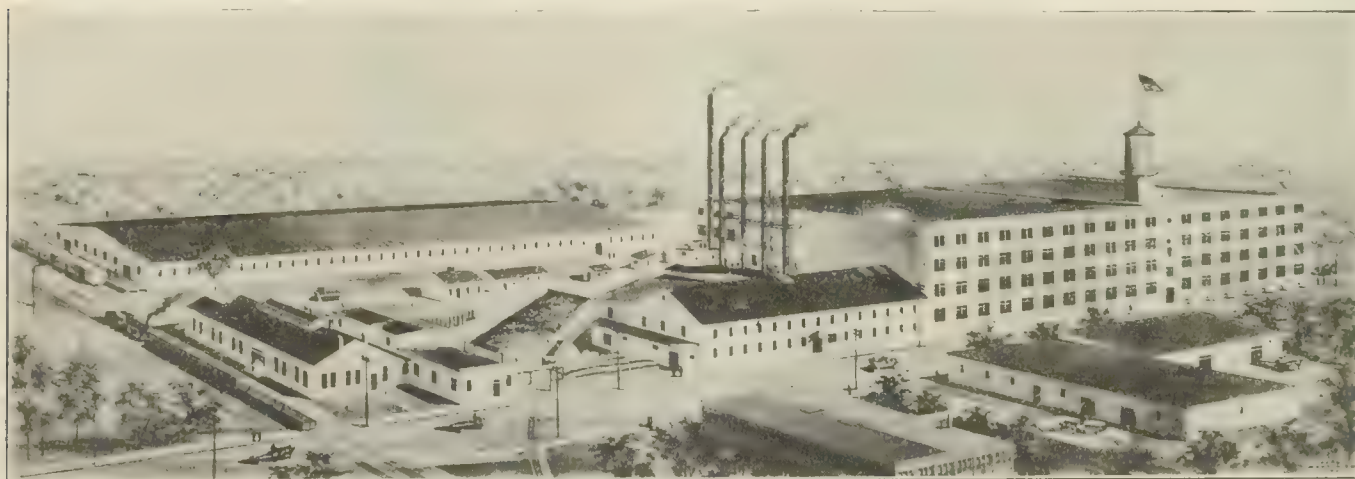
THE PLANT AS IT APPEARS TO-DAY.

115 R. C. Jones 12 acres of prime bog area, and has an estimated population of 5,000 workers. This building changed owners during the past month, the consideration being reported at \$7,500,000.

FIRESTONE ERECTS LARGE RIM PLANT.

THE Firestone Tire & Rubber Co. has recently gone into rim manufacture on an extensive scale, according to the announcement of Mr. H. S. Firestone, president of the Firestone Tire & Rubber Co. The new plant, which is said to be elaborately equipped, is now in operation and making all kinds of automobile, motor truck, and carriage tire rims. It is claimed that the advent of this new Firestone industry will result in a radical saving in the cost of wheel equipment.

The new rim plant, of which the accompanying picture is an excellent reproduction, adjoins the present tire factory and is equipped with the latest types of machines for rolling, shaping, electric welding, galvanizing, and so forth. It is further proposed that on the completion of the new Firestone tire plant, now in process of erection, the present tire factory building shall be equipped with additional rim machinery, thus giving the Firestone Co. an exceedingly large rim producing capacity.



NEW FIRESTONE RIM PLANT.

THE UNITED STATES TIRE CO.—A NEW CONSOLIDATION.

THE incorporation of the United States Tire Co., under the laws of New York, with a nominal capital of \$500,000, marks the first step toward a reorganization of four important rubber tire companies—The Hartford Rubber Works Co., Morgan & Wright, The G & J Tire Co., and the Continental Caoutchouc Co.—all of which are constituents of the Rubber Goods Manufacturing Co., which in turn is a branch of the United States Rubber Co.

Although members of the same family, the four tire companies named have not been conducted as such in some of their details, and it is to rectify the inconvenience which sometimes resulted from this state of affairs that the United States Tire Co. has been formed. It will take over the head sales department and branch stores of the four companies, and henceforth conduct them as one, and generally keep the family relation close and harmonious.

Elisha S. Williams, president of the Rubber Goods Co., is president of the United States Tire Co., and Charles J. Butler, president of Morgan & Wright, is vice president. Joseph M. Gilbert, general manager of the Continental Caoutchouc Co., becomes general manager of the United States Tire Co., and Justus D. Anderson, president of The Hartford Rubber Works Co., the general sales manager.

Instead of the four separate sales departments that now exist, the country will be divided into three districts, each in charge of a manager. The Eastern district, with offices in New York, will be in charge of O. S. Tweedy, now sales manager of the

Continental company; the Central district, with offices in Chicago, will be in charge of A. I. Philp, now vice president and sales manager of Morgan & Wright; the Pacific Coast district, with offices in San Francisco, will be in charge of Joseph Western, secretary of Morgan & Wright. The general headquarters of the United States Tire Co. will be in New York.

The four manufacturing companies will retain their respective corporate existence, and their officials will not be disturbed, but henceforth everything relating to the purchase or sale of their tires will be conducted through the new organization. As fully three-fourths of the 1911 business already has been written, however, the full effects of the new arrangement will not become apparent until next fall. One of the most immediate steps will be the concentration of the various branch stores which now are separately maintained. Each of these consolidated branches will carry tires made by the four factories concerned. None of the four brands will be sacrificed or pushed to the disadvantage of the other.

Concerning the proposed plans, J. M. Gilbert said: "The reorganization and concentration is a perfectly logical step and is in line with the best business thought, and, in fact, with the

spirit of the times. There has been no secret about the ownership of the four companies. From the beginning they have been known as members of the Rubber Goods Manufacturing Co., and it is illogical that they should continue to be rivals and pull against each other. While lessening selling expenses is the chief reason for the new arrangement, there will be no change in the quality of the various tires. Although controlled by the same interests, the companies have always done business as competitors and engaged in keen commercial warfare with each other as if there were no existing family tie. The parent corporation naturally suffered from these methods, and it is to rectify them that the new company has been formed."

TRADE NEWS NOTES.

W. T. RAWLINGS, who had been with the Chicago Rubber Co. since its formation, has associated himself with the Ohio Rubber Co., at Cleveland, where he assumed his new duties on January 3. At a meeting of his fellow employés and friends in Chicago a fine gold watch and chain were presented him as a token of their high esteem, and many regrets were expressed on account of his change of location. The Ohio Rubber Co. have become active in the rubber footwear line, and Mr. Rawlings has had much experience with such goods.

The Goodyear's India Rubber Glove Manufacturing Co. are bringing out an elaborate catalogue of druggists' sundries, the work of Mr. Anton Eggers, superintendent of this department.

Work was resumed on January 3 at the factory of the Apsley Rubber Co. (Hudson, Massachusetts) after a two weeks' rest.

UNITED STATES RUBBER CO.'S ISSUES.

TRANSACTIONS on the New York Stock Exchange for five weeks ending January 21:

COMMON STOCK, \$5,000,000.

The treasury of a subsidiary company holds \$1,500,000.

Last Dividend, April 30, 1900, 5%.

Week December 24	Sales 1,400 shares	High 34	Low 33
Week December 31	Sales 8,000 shares	High 38	Low 33
Week January 7	Sales 1,100 shares	High 37	Low 36
Week January 14	Sales 5,100 shares	High 37	Low 36
Week January 21	Sales 1,000 shares	High 37	Low 36
For the year—High, 37; Jan. 14, Low, 36; Jan. 6, Last year—High, 35; Low, 35.			

First Preferred Stock, \$3,500,000.

Last Dividend, January 31, 1911, 5%.

Week December 24	Sales 409 shares	High 109 $\frac{3}{4}$	Low 109
Week December 31	Sales 2,714 shares	High 111	Low 109 $\frac{1}{2}$
Week January 7	Sales 670 shares	High 111 $\frac{1}{2}$	Low 111
Week January 14	Sales 1,325 shares	High 111 $\frac{3}{4}$	Low 111
Week January 21	Sales 940 shares	High 110 $\frac{1}{2}$	Low 109 $\frac{1}{2}$
For the year—High, 111 $\frac{3}{4}$; Jan. 14, Low, 109 $\frac{1}{2}$; Jan. 18, Last year—High, 116; Low, 99.			

SECOND PREFERRED STOCK, \$9,965,000.

Last Dividend, January 31, 1911, 11 $\frac{1}{2}$ %.

Week December 24	Sales 400 shares	High 71 $\frac{1}{2}$	Low 70 $\frac{7}{8}$
Week December 31	Sales 400 shares	High 74	Low 73
Week January 7	Sales — shares	High —	Low —
Week January 14	Sales 200 shares	High 74	Low 73 $\frac{3}{4}$
Week January 21	Sales 100 shares	High 73	Low 73
For the year—High, 74; Jan. 14, Low, 73; Jan. 21, Last year—High, 84; Low, 59 $\frac{1}{2}$.			

SIX PER CENT. TRUST GOLD BONDS, \$19,000,000.

Outstanding of the 1908 issue of \$20,000,000.

Week December 24	Sales 34 bonds	High 102 $\frac{7}{8}$	Low 102 $\frac{1}{2}$
Week December 31	Sales 29 bonds	High 103 $\frac{3}{8}$	Low 103 $\frac{3}{4}$
Week January 7	Sales 104 bonds	High 103 $\frac{1}{2}$	Low 103
Week January 14	Sales 73 bonds	High 103 $\frac{3}{8}$	Low 103 $\frac{3}{8}$
Week January 21	Sales 56 bonds	High 103 $\frac{7}{8}$	Low 103 $\frac{3}{8}$
For the year—High, 103 $\frac{7}{8}$; Jan. 14, Low, 103; Jan. 7, Last year—High, 104 $\frac{1}{2}$; Low, 101 $\frac{3}{4}$.			

COMMON STOCK.

	1905.	1906.	1907.	1908.	1909.	1910.
Shares sold	723,665	607,800	175,277	191,200	517,411	239,666
Highest price	58 $\frac{1}{2}$	59 $\frac{1}{2}$	52 $\frac{1}{2}$	37 $\frac{1}{2}$	57 $\frac{7}{8}$	52 $\frac{1}{2}$
Lowest price	33 $\frac{3}{4}$	38	13 $\frac{1}{2}$	17 $\frac{1}{2}$	27	27

Highest 1910, Jan. 3; Lowest, July 26; Closing 37.

FIRST PREFERRED STOCK.

	1905.	1906.	1907.	1908.	1909.	1910.
Shares sold	200,497	123,760	120,108	94,400	199,512	91,849
Highest price	118 $\frac{1}{2}$	115	109 $\frac{7}{8}$	108	123 $\frac{1}{2}$	116 $\frac{1}{2}$
Lowest price	98 $\frac{1}{8}$	104 $\frac{1}{4}$	61 $\frac{1}{4}$	76	98	99

Highest 1910, Jan. 10; Lowest July 26; Closing 110 $\frac{1}{2}$.

SECOND PREFERRED STOCK.

	1905.	1906.	1907.	1908.	1909.	1910.
Shares sold	21,550	59,845	31,203	21,131	61,790	19,406
Highest price	83 $\frac{3}{4}$	87 $\frac{1}{2}$	78 $\frac{1}{8}$	75 $\frac{1}{2}$	89 $\frac{1}{2}$	84
Lowest price	75	75	39	42	67 $\frac{1}{2}$	59 $\frac{1}{4}$

Highest 1910, Jan. 3; Lowest July 27; Closing 73.

SIX PER CENT. TRUST GOLD BONDS.

	1910.
Bonds sold	3,631
Highest price (January 3)	104 $\frac{1}{2}$
Lowest price (July 27)	101 $\frac{3}{4}$

The board of directors of the United States Rubber Co., on January 5, declared from the net profits the regular quarterly dividends of 2 per cent. on the First preferred stock, and of 1 $\frac{1}{2}$ per cent. on the Second preferred stock, to holders of record at the close of business on January 16, payable without closing of the transfer books on January 31.

NEW INCORPORATIONS.

REVERE Rubber Co., December 19, 1910, under the laws of Rhode Island; capital, \$4,000,000. Incorporators: Walter S. Ballou, Cumberland; Clarence H. Guild, Providence; and James Harris, Smithfield—all of Rhode Island. Further details appear in another column.

Endurance Tire and Rubber Co., December 16, 1910, under the laws of New Jersey; capital \$100,000. The object is to manufacture automobile tires and tubes, besides making a specialty of rubber bands and later a full line of molded goods. Clement E. Eckrode is president and general manager; George G. Russell,

secretary and treasurer; and James W. Devine, superintendent. The factory is at New Brunswick, New Jersey.

O'Sullivan Rubber Co., December 16, 1910, under the laws of Delaware; authorized capital, \$1,600,000. Incorporators: Joseph A. Bennett, Brooklyn, New York; Harry W. Davis, Wilmington, Delaware; Perley H. Noyes, Tenafly, New Jersey; Graham Foster, No. 532 West One Hundred and Fifty-fourth street, and Renwick F. H. Macdonald, No. 1052 College avenue—both of New York. This corporation is formed in connection with the sale of the business of the O'Sullivan Rubber Co. (Lowell, Massachusetts), the rubber heel concern, incorporated in Maine in 1899. [See I R W January 1, 1911, page 138.]

Western Compound Rubber Co., December 9, 1910, under the laws of Ohio; capital, \$100,000. Incorporators: Henry W. Jones, John E. Pitts, Harry F. Taylor, Robert T. Jones, and J. Albert Manss. Office located at No. 709 Sycamore street, Cincinnati, Ohio. H. W. Jones, manager, advises THE INDIA RUBBER WORLD that the company purpose building a factory in Cincinnati for making a mineral rubber compound for automobile tires, having been convinced by experiments of the wearing qualities of this material. It is pointed out that this is not to be offered as a cheap product, a wholesale price of \$1 a pound being mentioned.

Endurance Tire Co., December 17, 1910, under the laws of Michigan; authorized capital, \$150,000; paid in, \$100,000. Incorporators: George D. Reid, Arthur H. Britton, and Clair Hodgson—all of Toronto, Canada. The company will produce a solid rubber tire invented by H. H. Hodgson, which is formed of rubber sections held by a steel case, a hoop of steel supporting the tire, with an air space between the hoop and the rim. The new tire is described as being "more resilient than air."

Safety Tire Co., December 7, 1910, under the laws of New York; capital, \$50,000. Incorporators: Reginald H. Schenck, No. 275 Central Park West; Walter E. Holloway, No. 249 West One Hundred and Twenty-third street—both of New York—and Orville R. Van Vechten, Tompkinsville, N. Y.

American Tire and Rubber Co., December 30, 1910, under the laws of Illinois; capital, \$10,000. Incorporators: George W. Stephens, William A. Conover, and Spencer Ward. Principal office: No. 1229 Michigan avenue, Chicago. This company was incorporated originally under the Illinois laws May 12, 1910, as the Factory Auto Supply Co. The corporate title was changed under the date first given by the filing of a certificate with the secretary of state at Springfield.

Puritan Rubber Co., December 21, 1910, under the laws of Maine; capital, \$1,000,000. Incorporators: Thomas McAuliffe and Edward J. Young, both of Boston, and C. L. Andrews, Augusta, Maine.

Montague Rubber Co., December 5, 1910, under the laws of Virginia; capital, \$40,000 maximum and \$10,000 minimum. Incorporators: J. W. Montague (president), John Gill Buck (vice-president and general manager), and C. M. Cruser (secretary and treasurer)—all of Norfolk, Va.

Hentschel-Kemter Tire Co., January 7, 1911, under the laws of New Jersey; authorized capital, \$100,000. Incorporators: Paul M. Kemter, West New York, New Jersey; Arthur W. Hentschel, Union Hill, New Jersey; and Cuthbert I. Gillespie, Montgomery, New York.

Hoeft & Co., Inc., January 5, 1911, under the laws of Illinois; capital, \$20,000; to deal in tires and rubber goods. Incorporators: Charles O. Rundahl, Earl O. Immel, and Lester L. Falk. Location of business office: Nos. 141-3 West Michigan street, Chicago.

Rubber Production Co., December 20, 1910, under the laws of Delaware; authorized capital, \$3,000,000. Incorporators: David C. Munsen, John G. Clark—both of No. 34 Nassau street, New York, and James M. Satterfield, Dover, Delaware.

The Empire Tire Co., a New Jersey corporation, having an authorized capital of \$500,000, was admitted to carry on business in Michigan under the corporation laws of that state on December 16, 1910, the Michigan office being at Detroit.

Review of the Crude Rubber Market.

THE present condition of the crude rubber market is weak and vacillating. Prices since our last report have generally receded, and the whole situation lacks tone. Manufacturers are buying only for the satisfaction of immediate necessity and show little interest in the market.

At the close of January there was a short advance in the price of crude rubber in the London market, but locally prices remained entirely nominal. The *Journal of Commerce*, New York, in commenting on the situation, says:

"Despite the activity in London, no buying movement resulted here. Manufacturers consider London at present only a 'paper' market, but believe that the present tactics are especially prepared to whip them into the market if possible.

"The general business outlook here is not of a character to give the automobile industry any material boom. Manufacturers to no little extent are loath to part with money and bankers are not over enthusiastic over automobile paper. The consumption of footwear and other rubber apparel is at a minimum for the period in all probability. There is little snow anywhere and the country is clear from Chicago east to the seaboard."

NEW YORK QUOTATIONS.

Following are the quotations at New York for Pará grades, one year ago, one month ago, and January 31—the current date:

PARÁ.	Feb. 1, '10.	Jan. 1, '11.	Jan. 30.
Islands, fine, new.....	179@180	118@119	112@113
Islands, fine, old.....	none here	122@123	none here
Upriver, fine, new.....	187@188	137@138	124@125
Upriver, fine, old.....	189@190	140@141	128@129
Islands, coarse, new.....	75@ 76	70@ 71	65@ 66
Islands, coarse, old.....	none here	none here	none here
Upriver, coarse, new.....	117@118	100@101	96@ 97
Upriver, coarse, old.....	none here	104@105	100@101
Cameta.....	84@ 85	72@ 73	69@ 70
Caucho (Peruvian), ball.....	110@111	99@100	94@ 95
Caucho (Peruvian), sheet.....	89@ 90	none here	none here

PLANTATION PARÁ.

Fine smoked sheet.....	200@201	156@157	140@141
Fine pale crepe.....	208@209	143@144	124@125
Fine sheets and biscuits.....	—@ —	138@139	118@119

CENTRALS.

Esmeralda, sausage.....	104@105	94@ 95	90@ 91
Guayaquil, strip.....	87@ 88	none here	none here
Nicaragua, scrap.....	99@100	89@ 90	88@ 89
Panama.....	none here	none here	none here
Mexican, scrap.....	100@101	88@ 89	86@ 87
Mexican, slab.....	78@ 80	56@ 57	50@ 51
Mangabeira, sheet.....	none here	75@ 76	68@ 70
Guayule.....	64@ 65	65@ 66	60@ 61
Balata, sheet.....	—@ —	74@ 75	82@ 84
Balata, block.....	—@ —	52@ 53	58@ 68

AFRICAN.

Lopori, ball.....	140@141	120@121	109@110
Aruwimi.....	120@121	104@105	105@106
Upper Congo, ball, red.....	125@126	108@109	109@110
Sierra Leone, 1st quality.....	123@124	119@120	105@106
Massai, red.....	124@125	119@120	106@107
Soudan niggers.....	107@108	105@106	94@ 95
Cameroon, ball.....	79@ 80	65@ 66	62@ 63
Benguela.....	75@ 76	82@ 83	75@ 76
Madagascar, pinky.....	99@100	none here	none here
Accra flake.....	25@ 26	44@ 45	40@ 41

EAST INDIAN.

Assam.....	100@101	93@ 94	90@ 91
Pontianak.....	—@ —	6@ 6 1/2	6@ 6 1/8
Borneo.....	57@ 67	none here	none here

Late Pará cables quote:

	Per Kilo.		Per Kilo.
Islands, fine.....	4\$600	Upriver, fine.....	7\$200
Islands, coarse.....	2\$500	Upriver, coarse.....	4\$500
		Exchange.....	16 3-16d.

Latest Manáos advices:

Upriver, fine.....	7\$000	Exchange.....	16 3-16d.
Upriver, coarse.....	4\$000		

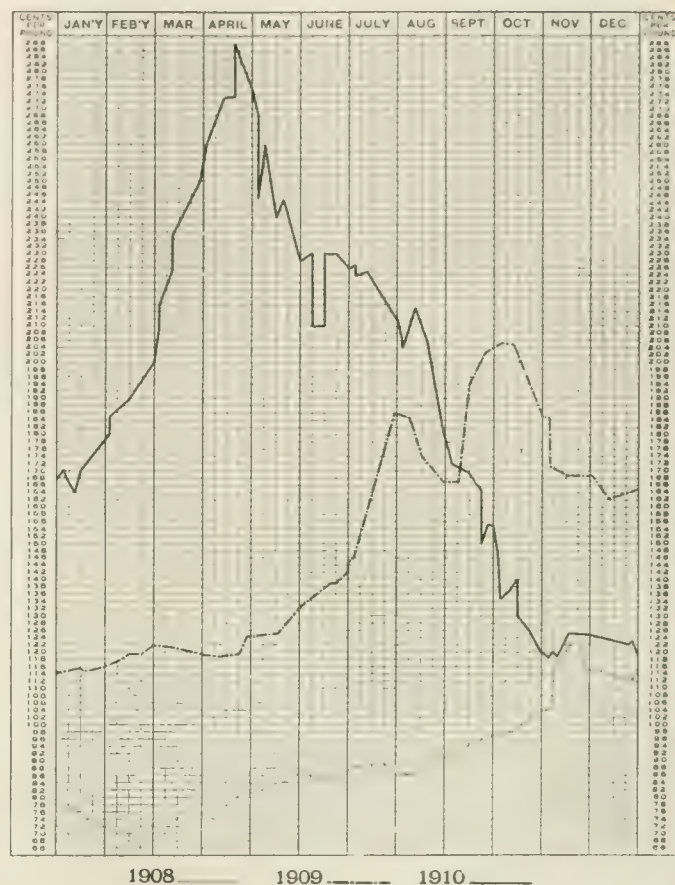


CHART SHOWING FLUCTUATIONS IN ISLANDS SPOT FINE PARA RUBBER AT NEW YORK, FOR THREE YEARS.

[Copyright, 1911, by Henry A. Gould.]

NEW YORK PRICES FOR DECEMBER (NEW RUBBER).

	1910.	1909.	1908.
Upriver, fine.....	\$1.36 @ 1.50	\$1.75 @ 1.93	\$1.15 @ 1.23
Upriver, coarse.....	1.00 @ 1.05	1.11 @ 1.21	.89 @ .94
Islands, fine.....	1.19 @ 1.25	1.64 @ 1.72	1.12 @ 1.16
Islands, coarse.....	.70 @ .73	.69 @ .72	.52 @ .61
Cameta.....	.71 @ .76	.79 @ .82	.57 @ .64

African Rubbers.

NEW YORK STOCKS (IN TONS).

December 1, 1909.....	134	July 1, 1910.....	120
January 1, 1910.....	228	August 1.....	250
February 1.....	134	September 1.....	300
March 1.....	161	October 1.....	375
April 1.....	121	November 1.....	100
May 1.....	125	December 1.....	140
June 1.....	90	January 1, 1911.....	115

Rubber Scrap Prices.

LATE New York quotations—prices paid by consumers for car-load lots, per pound—are slightly lower, as follows:

	January 1.	February 1.
Old rubber boots and shoes—domestic.....	9 1/2 @ 9 3/8	9 1/4 @ 9 3/8
Old rubber boots and shoes—foreign.....	9 @ 9 1/8	8 3/4 @ 8 7/8
Pneumatic bicycle tires.....	5 @ 5 1/4	4 1/2 @ 4 3/4
Automobile tires.....	8 3/4 @ 8 1/2	8 1/4 @ 8 3/8
Solid rubber wagon and carriage tires.....	9 1/4 @ 9 1/2	8 1/2 @ 9
White trimmed rubber.....	11 3/4 @ 12	11 @ 11 1/2
Heavy black rubber.....	6 @ 6 1/4	5 @ 5 1/2
Air brake hose.....	5 @ 5 1/8	4 3/4 @ 5
Garden hose.....	2 @ 2 1/4	2 @ 2 1/4
Fire and large hose.....	2 7/8 @ 3	2 1/2 @ 2 3/4
Matting.....	1 @ 1 1/8	1 @ 1 1/8

Statistics of Para Rubber (Excluding Caucho).

New York.

	NEW YORK.		Total 1910.	Total 1909.	Total 1908.
	Fine and Medium.	Coarse.			
Stocks, November 30....tons	128	28 =	156	218	248
Arrivals, December.....	1,149	384 =	1,533	2,675	2,299
Aggregating	1,277	412	1,689	2,893	2,547
Deliveries, December	1,096	382	1,478	2,686	2,303
Stocks, December 31.....	181	30 =	211	207	244
	PARA		ENGLAND		
	1910.	1909.	1910.	1909.	1908.
Stocks, Nov. 30....tons	1,190	1,385	475	1,335	500
Arrivals, December	2,315	3,140	3,015	1,248	960
Aggregating	3,505	4,525	3,490	2,583	1,460
Deliveries, December ...	2,830	4,375	2,795	1,093	800
Stocks, December 31 ..	675	150	695	1,490	385
World's visible supply, December 31....tons	3,891	2,358	2,484		
Para receipts, July 1 to December 31.....	13,400	14,970	14,075		
Para receipts of caucho, same dates.....	2,370	1,840	1,665		
Afloat from Para to United States, Dec. 31.	435	916	849		
Afloat from Para to Europe, Dec. 31.....	1,080	700	251		

Plantation Rubber From the Far East.

EXPORTS OF CEYLON GROWN RUBBER.

[From January 1 to December 19, 1909 and 1910. Compiled by the Ceylon Chamber of Commerce.]

	1909.	1910.
To Great Britain	793,061	1,495,071
To United States	470,812	1,480,693
To Canada		7,476
To Belgium	34,377	66,114
To Germany	20,035	14,203
To Australia	8,893	5,030
To Japan		3,246
To Italy	835	1,909
To Austria	219	1,041
To France	1,639	
To China	2,184	

Total 1,332,055 3,074,783

[Same period 1908—790,815 pounds; same 1907—506,373.]

TOTAL EXPORTS FROM MALAYA.

[From January 1 to dates named. Reported by BARTON & Co., Singapore. These figures include the production of the Federated Malay States, but not of Ceylon.]

FROM—	1908.	1909.	1910.
Singapore (to Nov. 24) ..pounds	1,857,312	2,226,799	3,308,622
Penang (to Nov. 15).....	1,289,124	1,931,643	2,090,175
Port Swettenham (to Nov. 12) ..	2,138,262	7,224,781	
Total	3,146,436	6,296,704	12,623,578

PARA RUBBER VIA EUROPE.

POUNDS.	
DEC. 17.—By the <i>Pennsylvania</i> =Hamburg:	
N. Y. Commercial Co. (Fine)...	17,000
A. T. Morse & Co. (Fine).....	5,500
Wallace L. Gough Co. (Fine)...	4,500
DEC. 19.—By the <i>Baltic</i> =Liverpool:	
N. Y. Commercial Co. (Fine)...	140,000
A. T. Morse & Co. (Fine).....	66,000
James T. Johnstone (Fine)....	3,500
DEC. 20.—By the <i>Amerika</i> =Hamburg:	
A. T. Morse & Co. (Fine).....	4,500
General Rubber Co. (Fine)....	22,500
N. Y. Commercial Co. (Coarse)	4,500
DEC. 23.—By the <i>Lusitania</i> =Liverpool:	
N. Y. Commercial Co. (Fine)...	22,500
Robinson & Co. (Fine).....	11,000
Rubber Trading Co. (Fine)....	4,500
DEC. 28.—By the <i>Cymric</i> =Liverpool:	
Poel & Arnold (Fine).....	56,000
A. T. Morse & Co. (Fine).....	18,000
N. Y. Commercial Co. (Fine)...	11,000
DEC. 29.—By the <i>President Lincoln</i> =Hamburg:	
Poel & Arnold (Coarse).....	22,500
Rubber Trading Co. (Fine)....	3,500

DEC. 31.—By the <i>Campania</i> =Liverpool:	
N. Y. Commercial Co. (Fine)...	90,000
Poel & Arnold (Fine).....	15,000
Robinson & Co. (Fine).....	11,000
JAN. 3.—By the <i>Minnewaska</i> =London:	
General Rubber Co. (Coarse).....	22,500
JAN. 3.—By the <i>Oruba</i> =Mollendo:	
General Rubber Co. (Caucho).....	11,000
JAN. 9.—By the <i>Caronia</i> =Liverpool:	
Robinson & Co. (Fine).....	7,000
Poel & Arnold (Fine).....	3,500
JAN. 13.—By the <i>Lusitania</i> =Liverpool:	
Poel & Arnold (Coarse).....	90,000
JAN. 16.—By the <i>Celtic</i> =Liverpool:	
N. Y. Commercial Co. (Fine)...	34,000
A. T. Morse & Co. (Fine)....	17,000
Rubber Trading Co. (Fine)....	5,000
Raw Products Co. (Coarse)....	4,500
JAN. 19.—By the <i>President Grant</i> =Hamburg:	
N. Y. Commercial Co. (Coarse)	22,500

OTHER NEW YORK ARRIVALS.

CENTRALS.

[*This sign, in connection with imports of Centrals, denotes Guayule rubber.]

DEC. 17.—By the <i>Senator</i> =Bluefields:	
Manhattan Rubber Manufacturing Co.	3,000

SUMMARY OF PRICES FOR 1910.

	UPRIVER		ISLAND.		CAMELIA.
	Fine.	Coarse.	Fine.	Coarse.	
January	178@187	111@115	167@181	71@75	79@85
February	187@210	115@128	181@204	75@89	85@98
March	209@258	130@170	203@245	90@107	95@128
April	258@292	170@187	245@278	107@115	128@135
May	235@280	160@182	226@272	93@109	110@127
June	223@245	150@163	213@230	93@105	110@125
July	216@240	148@155	208@225	98@103	110@123
August	187@220	140@148	178@210	94@98	96@110
September	155@190	122@142	150@182	90@92	90@98
October	137@150	102@120	120@146	73@90	75@89
November	136@152	102@107	120@128	73@75	75@78
December	136@150	100@105	119@125	70@73	72@76

AVERAGE PRICES.

1910	201 1/4	136 1/4	189 1/4	90	100
1909	159 1/4	107	149 1/4	66 1/4	77
1908	93 1/4	67 1/2	88 1/4	47 1/2	52
1907	109 1/4	88	104 1/4	61 3/4	65 1/2
1906	124 1/2	93 1/2	121	70	72 1/4
1905	128 1/2	93 1/2	125 1/2	72	74

IMPORTS FROM PARA AT NEW YORK.

The Figures Indicate Weight in Pounds.

DECEMBER 23.—By the steamer *Clement*, from Manáos and Pará:

	Fine.	Medium.	Coarse.	Caucho.	Total.
A. T. Morse & Co.	197,400	13,700	88,600	32,200	331,900
Poel & Arnold	118,500	31,500	91,800		241,800
New York Commercial Co.	97,100	22,500	29,200	1,600	150,400
General Rubber Co.	73,900	13,300	20,200	1,700	109,100
H. A. Astlett	16,500	2,900	18,800	1,400	39,600
Hagemeyer & Brunn	11,400		10,500		21,900
Henderson & Korn	3,600		1,800		5,400
Czarnikow-Rionda Co.	7,000				7,000
Total	525,400	83,900	260,900	36,900	907,100

JANUARY 4.—By the steamer *Hubert*, from Manáos and Pará:

Poel & Arnold	99,200	56,000	89,200	4,000	248,400
New York Commercial Co.	125,600	25,600	77,000	2,100	230,300
A. T. Morse & Co.	74,400	24,500	41,400	400	140,700
General Rubber Co.	81,100	18,300	10,200	1,500	111,100
H. A. Astlett	36,500	6,800	15,900		59,200
G. Amsinck & Co.	36,300	700	7,100		44,100
Henderson & Korn	11,900		33,000		44,900
Hagemeyer & Brunn	12,100		14,500		26,600
Total	477,100	131,900	288,300	8,000	905,300

JANUARY 23.—By the steamer *Bernard*, from Manáos and Pará:

Poel & Arnold	100,900	39,300	165,100	6,900	312,200
New York Commercial Co.	73,600	26,100	48,200	8,600	156,500
A. T. Morse & Co.	53,700	11,700	59,200		124,600
L. Johnson & Co.	42,700	13,000	7,200	1,300	64,200
Hagemeyer & Brunn	17,400	1,100	19,100		37,600
General Rubber Co.	23,200	1,800			25,000
H. A. Astlett	7,100	1,100	8,600		16,800
Henderson & Korn	1,800		8,000		9,800
Total	320,400	94,100	315,400	16,800	746,700

DEC. 17.—By the *Monterey*=Frontera:

International Products Co.	5,000
Judkins & McCormick Co.	2,500
Harburger & Stack	2,000
E. N. Tibbals & Co.	1,500
W. L. Wadleigh	1,500
H. Marquardt & Co.	1,000
For Havre	4,500
Total	18,000

DEC. 19.—By the *Matanzas*=Tampico:

N. Y. Commercial Co.	*135,000
Ed. Maurer	*95,000
Continental-Mexican Rubber Co	*75,000
Poel & Arnold	15,000
Total	*320,000

DEC. 19.—By the *Prinz Sigismund*=Colombia:

Caballero & Blanco	9,000
A. Javanillo & Co.	5,500
Lionel Hagenaers & Co.	3,500
Suzarte & Whitney	2,500
Delima Cortissoz & Co.	1,500
Roldan & Van Sickle	1,000
Total	23,000

DEC. 21.—By the *Byron*=Bahia:

J. H. Rossbach & Bros.	15,500
Adolph Hirsch & Co.	6,500
Total	22,000

DEC. 22.—By the *Antilles*=New Orleans:

A. T. Morse & Co.	4,500
A. N. Rotholz	3,500
George Haegen & Co.	1,500
G. Amsinck & Co.	1,500
Isaac Brandon & Bros.	1,000
Total	12,000

<p>Jan. 3.—By the <i>Oruba</i>=Colombia:</p> <p>G. Amsinck & Co. 8,000</p> <p>Mecke & Co. 2,000</p> <p>A. M. Capen's Sons. 2,000</p> <p>12,000</p> <p>Jan. 4.—By the <i>Verdi</i>=Bahia:</p> <p>J. H. Rossbach & Bros. 50,000</p> <p>Adolph Hirsch & Co. 48,000</p> <p>98,000</p> <p>Jan. 4.—By the <i>Alliance</i>=Colon:</p> <p>G. Amsinck & Co. 14,000</p> <p>Mecke & Co. 5,000</p> <p>Piza, Nephews & Co. 4,000</p> <p>F. Rosenstern & Co. 2,000</p> <p>Wessels Kulenkampff & Co. 1,000</p> <p>A. Rosenthal & Sons. 1,000</p> <p>27,000</p> <p>Jan. 4.—By the <i>El Valle</i>=Galveston:</p> <p>Continental-Mexican Rubber Co. *50,000</p> <p>Jan. 4.—By the <i>Starangeren</i>=Bluefields:</p> <p>Atlantic Fruit Co. 3,000</p> <p>Jan. 4.—By the <i>Moracabo</i>=Curacao:</p> <p>Suzarte & Whitney. 2,500</p> <p>G. Amsinck & Co. 1,000</p> <p>3,500</p> <p>Jan. 4.—By the <i>Prinz Euel Friedrich</i>=Colombia:</p> <p>Pablo Calvet & Co. 6,000</p> <p>J. H. Rossbach & Bros. 5,000</p> <p>A. Javanillo & Co. 4,000</p> <p>Lionel Hagenaers & Co. 2,500</p> <p>Caballero & Blanco. 2,500</p> <p>Kunhardt & Co. 1,500</p> <p>Delima Cortissoz & Co. 1,000</p> <p>R. Del Castillo & Co. 1,000</p> <p>Semler & Wilber. 1,000</p> <p>Roldan & Van Sickle. 1,000</p> <p>25,500</p> <p>Jan. 5.—By the <i>Memus</i>=New Orleans:</p> <p>A. T. Morse & Co. 4,000</p> <p>Manhattan Rubber Manufacturing Co. 3,000</p> <p>Robinson & Co. 1,500</p> <p>Eggers & Jieinlen. 1,000</p> <p>9,500</p>			<p>Continental-Mexican Rubber Co.*150,000</p> <p>N. Y. Commercial Co. *35,000</p> <p>185,000</p> <p>Jan. 6.—By the <i>Mexico</i>=Frontera:</p> <p>Harburger & Stack. 4,500</p> <p>Rubber Trading Co. 4,000</p> <p>Henderson & Korn. 2,000</p> <p>E. Steiger & Co. 1,500</p> <p>N. Y. Commercial Co. 1,500</p> <p>Isaac Kubie Co. 1,000</p> <p>American Trading Co. 1,000</p> <p>H. Marquardt & Co. 1,000</p> <p>19,000</p> <p>Jan. 9.—By the <i>Caronia</i>=Liverpool:</p> <p>A. T. Morse & Co. 11,000</p> <p>Poel & Arnold. 3,500</p> <p>14,500</p> <p>Jan. 9.—By the <i>Colon</i>=Colon:</p> <p>G. Amsinck & Co. 6,000</p> <p>New York Commercial Co. 5,500</p> <p>Isaac Brandon & Bros. 3,000</p> <p>14,500</p> <p>Jan. 10.—By the <i>El Mundo</i>=Galveston:</p> <p>Continental-Mexican Rubber Co. *80,000</p> <p>Charles T. Wilson. *11,000</p> <p>91,000</p> <p>Jan. 12.—By the <i>African Prince</i>=Bahia:</p> <p>J. H. Rossbach & Bros. 20,000</p> <p>Adolph Hirsch & Co. 5,000</p> <p>25,000</p> <p>Jan. 12.—By the <i>Baraxia</i>=Hamburg:</p> <p>George A. Alden & Co. *13,500</p> <p>Jan. 12.—By the <i>Antilles</i>=Tampico:</p> <p>Continental-Mexican Rubber Co.*150,000</p> <p>New York Commercial Co. *65,000</p> <p>Ed. Maurer. *43,000</p> <p>Poel & Arnold. *22,500</p> <p>For Europe. *75,000</p> <p>*355,500</p> <p>Jan. 14.—By the <i>Morro Castle</i>=Vera Cruz:</p> <p>George A. Alden & Co. 1,000</p> <p>For Havre. 5,000</p> <p>6,000</p> <p>Jan. 16.—By the <i>Prinz Sigismund</i>=Colombia:</p> <p>R. Del Castillo & Co. 8,000</p> <p>Kunhardt & Co. 4,500</p> <p>Lionel Hagenaers & Co. 2,500</p> <p>A. Javanillo & Co. 1,500</p> <p>Caballero & Blanco. 1,000</p> <p>17,500</p> <p>Jan. 16.—By the <i>Celtic</i>=Liverpool:</p> <p>James T. Johnstone. 11,500</p> <p>Jan. 16.—By the <i>Senator</i>=Bluefields:</p> <p>Manhattan Rubber Manufacturing Co. 3,000</p> <p>Robinson & Co. 2,500</p> <p>Wessels Kulenkampff & Co. 1,000</p> <p>6,500</p> <p>Jan. 17.—By the <i>Magdalena</i>=Colon:</p> <p>G. Amsinck & Co. 5,000</p> <p>Mecke & Co. 2,000</p> <p>Pablo Calvet & Co. 1,500</p> <p>Fruit Despatch Co. 1,500</p> <p>J. Sambrada & Co. 1,500</p> <p>Isaac Brandon & Co. 2,500</p> <p>A. Rosenthal & Sons. 1,000</p> <p>15,000</p> <p>Jan. 18.—By the <i>Hawaiian</i>=Mexico:</p> <p>American Trading Co. 6,500</p> <p>Jan. 18.—By the <i>Advance</i>=Colon:</p> <p>G. Amsinck & Co. 25,000</p> <p>L. Johnson & Co. 7,000</p> <p>Fidanque Bros. & Co. 6,000</p> <p>Mecke & Co. 5,500</p> <p>J. Sambrada & Co. 4,500</p> <p>Pablo Calvet & Co. 3,000</p> <p>Roldan & Van Sickle. 1,500</p> <p>Graham, Hinkley & Co. 1,500</p> <p>A. T. Morse & Co. 1,000</p> <p>Dumarest Bros. & Co. 1,000</p> <p>A. M. Capen's Sons. 1,000</p> <p>Wessels Kulenkampff & Co. 1,000</p> <p>J. Julia & Co. 1,000</p> <p>59,000</p> <p>Jan. 19.—By the <i>Proteus</i>=New Orleans:</p> <p>A. N. Rotholz. 3,000</p> <p>Jan. 19.—By the <i>President Grant</i>=Hamburg:</p> <p>A. T. Morse & Co. *18,000</p> <p>Raw Products Co. *17,000</p> <p>*35,000</p> <p>Jan. 20.—By the <i>El Rio</i>=Galveston:</p> <p>Continental-Mexican Rubber Co.*115,000</p> <p>Raw Products Co. *15,000</p> <p>*130,000</p>			<p>Continental-Mexican Rubber Co.*150,000</p> <p>New York Commercial Co. *67,000</p> <p>*217,000</p> <p>Jan. 6.—By the <i>Mexico</i>=Frontera:</p> <p>Harburger & Stack. 5,500</p> <p>International Products Co. 1,500</p> <p>J. W. Wilson & Co. 1,000</p> <p>20,000</p> <p>AFRICAN.</p> <p>Dec. 17.—By the <i>Pennsylvania</i>=Hamburg:</p> <p>George A. Alden & Co. 50,000</p> <p>Rubber Trading Co. 5,500</p> <p>67,000</p> <p>Dec. 19.—By the <i>Baltic</i>=Liverpool:</p> <p>Rubber Trading Co. 24,000</p> <p>George A. Alden & Co. 20,000</p> <p>Poel & Arnold. 5,000</p> <p>Raw Products Co. 3,500</p> <p>52,500</p> <p>Dec. 19.—By the <i>America</i>=Hamburg:</p> <p>George A. Alden & Co. 11,000</p> <p>Poel & Arnold. 11,000</p> <p>Rubber Trading Co. 9,000</p> <p>31,500</p> <p>Dec. 20.—By the <i>Minnetonka</i>=London:</p> <p>Robert Badenhop. 2,100</p> <p>Dec. 21.—By the <i>Faderland</i>=Hamburg:</p> <p>Poel & Arnold. 70,000</p> <p>Rubber Trading Co. 15,000</p> <p>Wallace L. Gough Co. 15,000</p> <p>Robert Badenhop. 11,200</p> <p>111,200</p> <p>Dec. 23.—By the <i>St. Louis</i>=London:</p> <p>Poel & Arnold. 33,500</p> <p>Dec. 27.—By the <i>Agnella Ciampa</i>=Lisbon:</p> <p>Livesey & Co. 11,500</p> <p>Dec. 28.—By the <i>Guiana</i>=Bordeaux:</p> <p>George A. Alden & Co. 18,000</p> <p>Dec. 28.—By the <i>Cymric</i>=Liverpool:</p> <p>George A. Alden & Co. 22,500</p> <p>A. T. Morse & Co. 11,000</p> <p>Poel & Arnold. 7,000</p> <p>Raw Products Co. 3,500</p> <p>44,000</p> <p>Dec. 28.—By the <i>Kroonland</i>=Antwerp:</p> <p>George A. Alden & Co. 60,000</p> <p>Poel & Arnold. 33,500</p> <p>Wallace L. Gough Co. 15,000</p> <p>A. T. Morse & Co. 13,500</p> <p>Rubber Trading Co. 11,500</p> <p>Robert Badenhop. 4,700</p> <p>138,200</p> <p>Dec. 29.—By the <i>President Lincoln</i>=Hamburg:</p> <p>George A. Alden & Co. 75,000</p> <p>Poel & Arnold. 22,500</p> <p>Wallace L. Gough Co. 13,500</p> <p>Robert Badenhop. 17,600</p> <p>A. T. Morse & Co. 8,000</p> <p>General Rubber Co. 4,500</p> <p>Raw Products Co. 2,500</p> <p>Rubber Trading Co. 2,500</p> <p>146,100</p> <p>Dec. 30.—By the <i>Mesaba</i>=London:</p> <p>James T. Johnstone. 9,000</p> <p>Dec. 31.—By the <i>Campania</i>=Liverpool:</p> <p>Poel & Arnold. 11,500</p> <p>Robinson & Co. 7,000</p> <p>Livesey & Co. 5,500</p> <p>Raw Products Co. 4,500</p> <p>28,500</p> <p>Jan. 3.—By the <i>Lapland</i>=Antwerp:</p> <p>Poel & Arnold. 40,000</p> <p>Jan. 3.—By the <i>Cedric</i>=Liverpool:</p> <p>George A. Alden & Co. 45,000</p> <p>Rubber Trading Co. 11,500</p> <p>Robinson & Co. 2,500</p> <p>59,000</p> <p>Jan. 3.—By the <i>Lorraine</i>=Havre:</p> <p>George A. Alden & Co. 20,000</p> <p>Jan. 5.—By the <i>St. Paul</i>=London:</p> <p>A. T. Morse & Co. 37,000</p> <p>Poel & Arnold. 33,500</p> <p>70,500</p> <p>Jan. 9.—By the <i>Caronia</i>=Liverpool:</p> <p>General Rubber Co. 7,000</p> <p>George A. Alden & Co. 5,000</p> <p>James T. Johnstone. 3,500</p> <p>Raw Products Co. 3,000</p> <p>18,500</p> <p>Jan. 9.—By the <i>Hudson</i>=Bordeaux:</p> <p>George A. Alden & Co. 18,000</p> <p>Livesey & Co. 11,500</p> <p>29,500</p> <p>Jan. 9.—By the <i>Minneapolis</i>=London:</p> <p>George A. Alden & Co. 22,500</p>		
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JAN. 11.—By the <i>Rhein</i> —Hamburg:	
General Rubber Co.....	35,000
A. T. Morse & Co.....	2,500
George A. Alden & Co.....	2,000
Raw Products Co.....	4,500
For Akron, Ohio.....	4,500
	73,500

JAN. 11.—By the <i>Amstel</i> —Hague:	
Poel & Arnold.....	25,000

JAN. 11.—By the <i>De Maas</i> —Amsterdam:	
Poel & Arnold.....	11,000

JAN. 12.—By the <i>Leopold</i> —Hamburg:	
A. T. Morse & Co.....	45,000
Poel & Arnold.....	45,000
George A. Alden & Co.....	13,500
Wallace L. Gough Co.....	11,000
Rubber Trading Co.....	3,000
For Akron, Ohio.....	7,000
	124,500

JAN. 13.—By the <i>Lucania</i> —Liverpool:	
Poel & Arnold.....	13,500

JAN. 13.—By the <i>Kaiserin Auguste Victoria</i> —Lisbon:	
George A. Alden & Co.....	22,500

JAN. 16.—By the <i>Celtic</i> —Liverpool:	
Rubber Trading Co.....	5,500
LAVOSIA & Co.....	4,500
	10,000

JAN. 19.—By the <i>President Grant</i> —Hamburg:	
Poel & Arnold.....	10,000
Raw Products Co.....	9,000
Robert Badenhop.....	4,100
Wallace L. Gough Co.....	3,500
George A. Alden & Co.....	3,500
	30,000

JAN. 19.—By the <i>Samurai</i> —Antwerp:	
A. T. Morse & Co.....	11,500
Poel & Arnold.....	11,000
Raw Products Co.....	7,000
	29,500

LAST INDIAN.

[*Denotes plantation rubber.]

DEC. 19.—By the <i>Balta</i> —Liverpool:	
Henderson & Korn.....	*15,000

DEC. 20.—By the <i>Minnetonka</i> —London:	
Poel & Arnold.....	*30,000
Ed. Maurer.....	*18,000
	*48,000

DEC. 21.—By the <i>Koenigin Luise</i> —Genoa:	
Ed. Maurer.....	*7,000

DEC. 23.—By the <i>Muncaster Castle</i> —Singapore:	
Wallace L. Gough Co.....	25,000
Rubber Import Co.....	7,000
Malaysian Rubber Co.....	27,000
	59,000

DEC. 23.—By the <i>St. Louis</i> —London:	
New York Commercial Co.....	*5,000
Poel & Arnold.....	*5,000
William H. Stiles.....	*4,500
	*14,500

DEC. 28.—By the <i>Oceanic</i> —Liverpool:	
New York Commercial Co.....	*75,000
Poel & Arnold.....	*22,500
Robinson & Co.....	9,000
	106,500

DEC. 28.—By the <i>Kroonland</i> —Antwerp:	
A. T. Morse & Co.....	*35,000

DEC. 30.—By the <i>Indrawadi</i> —Singapore:	
Haebler & Co.....	28,000
Wallace L. Gough Co.....	*5,500
Malaysian Rubber Co.....	*22,500
	56,000

DEC. 30.—By the <i>Mesaka</i> —London:	
General Rubber Co.....	*56,000
James T. Johnstone.....	*9,000
	*65,000

DEC. 31.—By the <i>Stolzenfels</i> —Colombo:	
New York Commercial Co.....	*35,000
A. T. Morse & Co.....	*33,500
	*68,500

DEC. 31.—By the <i>Campania</i> —Liverpool:	
William H. Stiles.....	*17,500

DEC. 31.—By the <i>Indra</i> —Singapore:	
Haebler & Co.....	11,000
Ed. Maurer.....	20,000
Wallace L. Gough Co.....	*15,000
	46,000

JAN. 3.—By the <i>Minnetonka</i> —London:	
General Rubber Co.....	*15,000
New York Commercial Co.....	*11,000
Raw Products Co.....	*5,500
	*31,500

JAN. 4.—By the <i>De Maas</i> —Amsterdam:	
New York Commercial Co.....	35,600
A. T. Morse & Co.....	20,000
	55,600

JAN. 7.—By the <i>Pathan</i> —Singapore:	
Malaysian Rubber Co.....	19,000

JAN. 7.—By the <i>Lothian</i> —London:	
James T. Johnstone.....	*15,500
New York Commercial Co.....	*3,500
	*19,000

JAN. 9.—By the <i>Lothian</i> —Singapore:	
Haebler & Co.....	22,500
Poel & Arnold.....	11,500
Wallace L. Gough Co.....	*9,000
	43,000

JAN. 12.—By the <i>Adriatic</i> —London:	
Poel & Arnold.....	*15,000
New York Commercial Co.....	*8,000
	*23,000

JAN. 13.—By the <i>Inveric</i> —Colombo:	
New York Commercial Co.....	*45,000
A. T. Morse & Co.....	*7,000
	*52,000

JAN. 16.—By the <i>Minnetonka</i> —London:	
General Rubber Co.....	*77,000
Poel & Arnold.....	*67,000
Wallace L. Gough Co.....	11,500
	155,500

JAN. 19.—By the <i>New York</i> —London:	
New York Commercial Co.....	*50,000
A. T. Morse & Co.....	*15,000
Poel & Arnold.....	*22,500
	*87,500

GUTTA-JELUTONG.

POUNDS.

DEC. 23.—By the <i>Muncaster Castle</i> —Singapore:	
Wallace L. Gough Co.....	250,000
Haebler & Co.....	250,000
Rubber Import Co.....	110,000
Poel & Arnold.....	200,000
George A. Alden & Co.....	55,000
L. Littlejohn & Co.....	450,000
	1,315,000

DEC. 29.—By the <i>Indrawadi</i> —Singapore:	
L. Littlejohn & Co.....	175,000

DEC. 31.—By the <i>Indrawadi</i> —Singapore:	
Haebler & Co.....	650,000
Rubber Import Co.....	150,000
L. Littlejohn & Co.....	900,000
Wallace L. Gough Co.....	450,000
George A. Alden & Co.....	100,000
Poel & Arnold.....	150,000
	2,400,000

JAN. 7.—By the <i>Pathan</i> —Singapore:	
Haebler & Co.....	180,000

JAN. 9.—By the <i>Lothian</i> —Singapore:	
Haebler & Co.....	350,000
L. Littlejohn & Co.....	550,000
Wallace L. Gough Co.....	155,000
George A. Alden & Co.....	125,000
Poel & Arnold.....	55,000
	1,235,000

GUTTA-PERCHA.

POUNDS.

DEC. 23.—By the <i>Muncaster Castle</i> —Singapore:	
L. Littlejohn & Co.....	70,000

DEC. 31.—By the <i>Indrawadi</i> —Singapore:	
Haebler & Co.....	22,500
L. Littlejohn & Co.....	22,500
	45,000

JAN. 7.—By the <i>Pathan</i> —Singapore:	
L. Littlejohn & Co.....	22,500

JAN. 9.—By the <i>Lothian</i> —Singapore:	
L. Littlejohn & Co.....	22,500
George A. Alden & Co.....	11,000
	33,500

BALATA.

POUNDS.

DEC. 20.—By the <i>Saramaca</i> —Trinidad:	
J. A. Pauli & Co.....	7,000
J. A. Maurer.....	4,000
	11,000

JAN. 2.—By the <i>Madagascar</i> —Demarara:	
Middleton & Co.....	7,000

JAN. 12.—By the <i>Koenigin Luise</i> —Demarara:	
Ed. Maurer.....	13,500
Suzarte & Whitney.....	6,500
G. Amsinck & Co.....	2,000
	22,000

JAN. 18.—By the <i>Saramaca</i> —Trinidad:	
G. Amsinck & Co.....	28,000
Middleton & Co.....	11,500
Bathurst & De la Haye.....	1,000
	40,500

CUSTOM HOUSE STATISTICS.

Imports:	Pounds.	Value.
India-rubber.....	6,158,957	\$6,877,628
Balata.....	21,060	9,684
Gutta-percha.....	115,959	27,917
Gutta-jelutong (Pontianak).....	3,582,620	171,781
Guayule.....	1,223,252	635,572
Total.....	11,101,848	\$7,722,582
Exports:	Pounds.	Value.
India-rubber.....	200,201	\$233,204
Balata.....	6,290	3,018
Gutta-percha.....	4,200	1,300
Guayule.....	133,844	16,171
Reclaimed rubber.....	1,251,388	\$91,985
Rubber scrap imported.....	316,170	35,737
Rubber scrap exported.....		

BOSTON ARRIVALS.

Nov. 8.—By the <i>Bohemian</i> —Liverpool:	
George A. Alden & Co. (African).....	6,800
Nov. 10.—By the <i>Cambrian</i> —Liverpool:	
George A. Alden & Co. (Ceylon).....	4,500
Nov. 12.—By the <i>Zeeland</i> —Liverpool:	
Poel & Arnold (African).....	3,600
Nov. 16.—By the <i>St. Patrick</i> —Singapore:	
State Rubber Co. (Ceylon).....	37,500
State Rubber Co. (Jelutong).....	1,090,000
Wallace L. Gough Co. (Jelutong).....	160,000
L. Littlejohn & Co. (Jelutong).....	100,000
George A. Alden & Co. (Jelutong).....	55,000
	1,442,500
Nov. 24.—By the <i>Cymric</i> —Liverpool:	
Poel & Arnold (African).....	11,400
Nov. 24.—By the <i>Welch Prince</i> —Singapore:	
State Rubber Co. (Jelutong).....	880,000
DEC. 8.—By the <i>Anglian</i> —London:	
Poel & Arnold (African).....	8,800
DEC. 14.—By the <i>Bohemian</i> —Liverpool:	
George A. Alden & Co. (African).....	4,400
DEC. 18.—By the <i>Muncaster Castle</i> —Singapore:	
State Rubber Co. (Ceylon).....	26,200
L. Littlejohn & Co. (Jelutong).....	215,000
Haebler & Co. (Jelutong).....	230,000
	471,200
DEC. 21.—By the <i>Dezouian</i> —Liverpool:	
George A. Alden & Co. (African).....	5,600
DEC. 23.—By the <i>Indrawadi</i> —Singapore:	
State Rubber Co. (Ceylon).....	15,500
State Rubber Co. (Jelutong).....	625,000
L. Littlejohn & Co. (Jelutong).....	72,000
Haebler & Co. (Jelutong).....	56,000
	768,500
DEC. 29.—By the <i>Sagamore</i> —London:	
L. Sutro & Co. (African).....	7,000

CONSUMPTION OF INDIA-RUBBER BY THE UNITED STATES AND CANADA (IN TONS).

[From the Annual Statistical Summary of ALBERT T. MORSE & Co., New York.]

DETAILS.	1897.	1898.	1899.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.
Imports to United States.....	17761	18620	23095	20468	23208	21842	24760	27623	28635	29936	29433	29477	31129	32916
Exports to Europe.....	250	150	300	450	680	430	490	274	357	1625	558	480	681	1340
	17421	18470	22795	20018	22528	21412	24270	27349	28278	28311	28875	28991	30448	31576
Add stock on January 1.....	641	744	591	712	1198	1399	331	256	305	537	365	606	1553	1332
	18062	19214	23386	20730	23726	22811	24601	27605	28583	28848	29240	29603	32001	32908
Less stock close of year.....	744	591	712	1198	1399	331	256	305	537	365	606	1553	*1332	523
	17318	18623	22674	19532	22327	22480	24345	27300	28046	28483	28634	28050	30669	32385
Deliveries to manufacturers..														
Imports of Guayule rubber, 10,656 tons.														

*Includes Crispin's cargo, 958 tons.



10.3

FEBRUARY 1, 1911.

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Rubber Receipts at Manaus.

DURING November and five months of the crop season, for three years (courtesy of Messrs. Scholz & Co.):

	N O V E M B E R			J U L Y N O V E M B E R.		
	1900	1909.	1908.	1910	1909.	1908.
Rio Pongo-Are	468	1,874	556	3,498	3,475	3,071
Rio Mochi	316	89		1,638	1,464	
Rio Jumbay	104	389	536	941	987	
Rio Javary-Iquitos	348	480	331	1,117	1,514	1,227
Rio S.	187	25	56	553	465	509
Rio Ne	1	76	13	13	90	199
Total	1,874	2,972	1,834	7,129	8,143	7,777
Canal	27	357	24	1,111	1,333	1,070
Total	1,900	3,329	1,858	8,240	9,656	8,347
J U L Y N O V E M B E R						
Mochi	1,331	321	1,836	6,304	7,583	6,720
Pongo	577	610	272	1,936	2,073	1,618
Total	1,908	931	2,058	8,240	9,656	8,338

Antwerp.

RUBBER SUPPLIES FOR DECEMBER

DETAILS.	1910.	1909.	1908.	1907.	1906.
Stocks, Nov. 30, <i>kilos</i>	568,148	735,616	604,170	1,015,282	714,919
Arrivals since Dec. 1	—	315,997	520,182	59,444	636,466
Congo sorts	234,673	215,983	454,701	190,000	579,700
Other sorts	333,475	100,014	65,481	29,544	56,760
Aggregating	868,851	1,051,613	1,124,352	1,234,826	1,351,379
Sales in December ..	868,851	1,051,613	1,124,352	1,234,826	1,351,379
Stocks, December 31	—	715,519	59,738	1,006,894	658,184
Arrivals since Jan. 1	4,058,676	4,685,958	5,035,344	5,054,473	5,772,062
Congo sorts	3,105,357	3,492,332	4,262,531	4,346,141	4,593,759
Other sorts	953,319	1,193,626	772,813	708,332	1,178,303
Sales since Jan. 1	4,011,974	4,740,181	5,446,503	4,705,763	5,849,065

RUBBER ARRIVALS FROM THE CONGO.

DECEMBER 14.—By the steamer *Leopoldville*:

Bunge & Co.....	(Société Générale Africaine)	kilos	149,500
Do	(Compagnie des Indes et des Grands Lacs)		2,200
Do	(Société Africaine)		950
Do	(Compagnie Spécial Katanga)		5,700
Do	(Compagnie Industrielle du Congo)		500
Société Coloniale Anversoise....	(Belge du Haut Congo)		1,100
Do	(Cie. du Lomami)		1,100
Do	(Cie. du Kasai)		102,900
Cassart & Heuriet			2,200
Société Générale de Commerce.....	(Alimaïenne)		1,900
L. & W. Van de Velde			2,500
			270,550

JANUARY 6.—By the steamer *Bruxellesville*:

Banque & Co.	(Société Générale Africaine) Ltds	98,200	
Do	(Banque de l'Est et du Congo) Ltds	5,800	
Do	(Société Générale Africaine) Ltds	3,400	
Do	(Société Générale Africaine) Ltds	64,200	
Do	(Société Générale Africaine) Ltds	2,800	
L. & W. Van de Velde	(Cie. du Kasai)	65,000	
Do		3,500	
Société Coloniale Anversoise		275	
Williaert Frères		3,000	
Cassart & Hennebon		800	241,975

Para.

R. O. AHLERS & Co. report [January 2]:

With the declining quotations and uncertain tendency, transactions have been restricted to a hand-to-mouth supply, while holders of Upriver lots continue to keep out of the market at present prices.

THE HAVRE RUBBER MARKET.

ARRIVALS during 1910 at Havre were larger than in any former year, and notably larger than for 1909. The arrivals for four years past may be analyzed thus:

FROM—	1907.	1908.	1909.	1910.
French Congo	89,655	88,733	840,324	1,109,500
Other sources (except Pará) . .	232,321	130,000	371,514	302,901
Pará	3,339,147	2,483,444	2,569,338	3,045,627
Total	4,461,123	3,498,177	3,781,176	4,458,028

We quote from the annual review of Jean Reeder, broker at Havre: "The quality of Congo rubber has been further improved this year, thanks to the intelligent care brought to bear on the collecting processes by the exporters. This they have constantly realized in the excellent conditions, in spite of the critical state of market affairs. Quotations for caoutchouc have suffered, during the year, under consideration fluctuations of extraordinary violence. In spite of the extensive speculation in Pará sorts, in 1909, its upward movement continued at the opening of 1910, the culminating point being reached in April with a price of 12s. 4d. From this period the decline was rapid and continuous, owing to the systematic and inevitable holding off of buyers, and the year closed with a price of about 5s. 9d. It is, however, a matter of satisfaction to record the fact that the Congo varieties paid a much smaller tribute to the decline than did Pará, which may be attributed to the speculation and manipulation to which the latter product is so constantly subject."

COMPARATIVE HAVRE PRICES (FRANCS PER Kilo)

	Dec. 31, 1909.	Dec. 31, 1910.	De- crease.
Congo Haut-Oubangui	13.20-13.60	12.25-12.60	7.35%
Congo Kotto	13.20-13.60	12.25-12.60	7.35%
Congo Ekela Kadei-Sangha.....	13.50-14.50	13.30-14.—	3.45%
Congo Lobay	13.50-14.50	13.30-14.—	3.45%
Congo Haute-Sangha	14.20-14.60	13.30-14.—	4.10%
Pará, fine	21.60-21.75	15.95-16.10	25.97%

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Edited by HENRY C. PEARSON—Offices, No. 15 West 38th Street, NEW YORK.

Vol. XLIII. No. 6.

MARCH 1, 1911.

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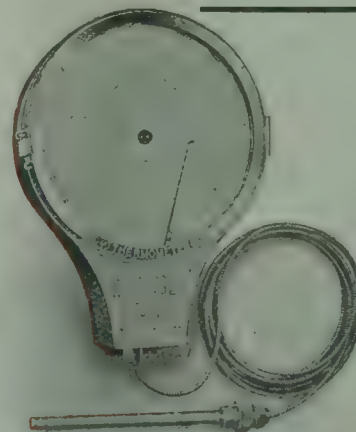
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Published on the 1st of each Month by

THE INDIA RUBBER PUBLISHING CO.

No. 15 West 38th Street, New York.

CABLE ADDRESS: IRWORLD, NEW YORK.

HENRY C. PEARSON, Editor

Vol. 43.

MARCH 1, 1911.

No. 6.

SUBSCRIPTIONS: \$3.00 per year, \$1.75 for six months, postpaid, for the United States and dependencies and Mexico. To the Dominion of Canada and all other countries, \$3.50 (or equivalent funds) per year, postpaid.

ADVERTISING: Rates will be made known on application.

REMITTANCES: Should always be made by bank or draft, Postoffice or Express money orders on New York, payable to THE INDIA RUBBER PUBLISHING COMPANY. Remittances for foreign subscriptions should be sent by International Postal Order, payable as above.

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Entered at New York postoffice as mail matter of the second class.

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GOVERNMENTAL SUPERVISION IN PLANTING.

THE general public very rarely have or can be expected to have an intelligent idea concerning the relative importance of governmental departments. If one, for instance, were to suggest to the average man that a department of agriculture could be and should be of more value to a country than any other department, the statement would be scoffed at. It takes very little explaining, however, to prove that the basic wealth of any aggregation of people comes from the ground, in fact is founded upon agricultural products in a great measure. It is, therefore, not only the privilege but the duty of a government to make its agricultural department an efficient, vital director and adviser of the agriculturalist.

These thoughts are prompted by a mental survey of what the government of Great Britain has done for her colonies through her Imperial Departments of Agriculture. The striking illustration of the wonderful success of rubber planting in Ceylon and the Federated Malay States will at once occur to the reader.

It is a curious fact, however, that striking illustrations very rarely gauge even in small measure the values of such work. Were it possible to take a census of mistakes prevented—a list of costly blunders

avoided—due to the research, the knowledge and the sound advice furnished planters by British Agricultural Departments the sum would be enormous.

Take, for example, our near neighbors, the West Indian Islands. The planters unguided would have covered those fertile islands with many sorts of rubber producers unsuited to climate or soil and perhaps both. With an alert, capable agricultural department, however, in the hands of men trained in such work, most of the planters were persuaded not to go heavily into any rubber producer until it had been thoroughly tried out and proved a success. This often entailed much waiting and disappointment, but it literally saved millions.

Today the areas where *Castilloa elastica* will grow are absolutely defined. Such islands as Dominica, whose sheltered, moisture-laden valleys are suitable for the *Hevea Brasiliensis* are plainly indicated because already tested. The dryer islands like Antigua, where there is a probability of a successful cultivation of the *Manihot dichotoma*, are undergoing the same searching, conscientious, experimentation.

It should be remembered that rubber, to these departments, is only one item. The same careful work is put upon every agricultural product and incidentally the broad knowledge thus gathered, particularly in relation to the many enemies to plant life, is of the greatest value to the rubber planter.

It is a curious fact but the agriculturist himself is often times the man who least appreciates the restraining influence of the specialists connected with his department of agriculture. He is very likely to look with scorn upon the man who spends precious hours in the detection of fungi or weeks in studying the life habits of some insignificant moth. He, too, is apt to think that his own agricultural society or grange really knows much more about growing things than does any college product, who never has or never will run a plantation for a livelihood.

Of course he is wholly wrong, both in his estimate of the value of the scientifically trained one and of his own society. An association of farmers or rubber planters that will work with an agricultural department, criticizing, suggesting and informing is of the greatest use, not only to the department itself but to the individual members. Where the best results are obtained it will be found such a community of purpose is always present.

THE CRUDE RUBBER OUTLOOK.

THERE is not at the present time that universal excitement over crude rubber matters that existed a year ago, when rubber was quoted at three dollars a pound; when it looked as if the motorist would have to sell his car to buy his tires, when rubber bands looked out of place on any desk not made of solid ma-

hogany, and when wet feet stared everybody in the face. At that time the matter assumed such importance that the daily press recklessly encroached on its police and sporting space to talk about the rubber situation.

The excitement has in the interim materially subsided. Rubber is now selling nearer to its normal figure, with a comfortable world supply of 6,000 tons, and a "famine" is no longer imminent. But with the constantly widening space that manufactured rubber is occupying in modern life, the question of an adequate supply of crude material is always interesting. Sixteen years ago the entire annual rubber supply of the world amounted to 35,000 tons, of which about one-half, or 17,000 tons, came to this country. Seventy per cent. of that was used in the manufacture of rubber boots and shoes, the rest going into a miscellaneous assortment of rubber goods. The amount of rubber consumed in the manufacture of tires was almost negligible, certainly not reaching 5 per cent. But all that is changed, and while we received in this country last year about 42,000 tons of rubber, 60 per cent. of that went to the tire manufacturers, and the rubber footwear men, manufacturers of mechanical goods and druggists' sundries, and all the others together, only got 40 per cent. of the rubber imports.

The demand for articles of all kinds manufactured from rubber has increased with every year, and the demand for tires has grown with great rapidity, while the supply of crude rubber has increased very slowly. For instance, the consumption of tires in 1908 increased 150 per cent. over the preceding year, and in 1909 showed a still further increase of 100 per cent., while during those same years the crude supply increased only 5 per cent. each year. While during the year just closed the demand for tires decreased slightly from what it was in the previous year, this condition is obviously only temporary. The automobile has now taken its place among the necessities of life—food, raiment and shelter being relegated to the luxuries—so no permanent relief can be expected from a diminished demand for tires, nor is it at all likely that people are going to use fewer hot water bags or wear fewer rubber boots. If there is any relief it must come from an increased crude rubber supply.

Now the outlook is that there will be an increased supply, but that it will come slowly. Of the 73,000 tons of crude rubber produced last year, 38,000 tons came from Brazil. That is, of course, all wild rubber, gathered along the tributaries of the Amazon. It is estimated that only one-tenth of the possible rubber supply of Brazil has ever been tapped. If this is true, there are 400,000 tons of excellent rubber along the Amazon which could be taken out each year. But the difficulties are so great—the necessity of employing only native labor, the great expense of equipping rubber-gathering parties and the primitive methods that still obtain—that it is extremely questionable whether the supply from that quarter will materially increase for some years. In the past fifteen years the output from the Amazon has increased

at the rate of about 6 per cent. a year. Undoubtedly with the increased incentive of higher prices, the production will grow more rapidly, but hardly more than 10 per cent. a year.

Over a quarter of the rubber supply, or about 18,000 tons a year comes from Africa, but there is little likelihood of any increase from this quarter, both because of the suicidal policy of destroying the vines in order to get the rubber and because the more humane methods now employed in the Congo are not likely to be as productive as the exacting, not to say, barbarous practices which are said formerly to have been in vogue. As a matter of fact, the supply from Africa decreased during the past year.

The largest increase in rubber production will undoubtedly come from the plantations in Ceylon and the Straits Settlements. This rubber has but recently become a factor in the situation. Four years ago only a few hundred tons had ever been exported from the Far East. In 1910 the exports from this region amounted to 10,000 tons. It is expected that the present year will see this increased to 15,000 tons, and men familiar with the situation in Ceylon and the Malay Peninsula predict that there will be a further increase of 3,000 or 4,000 tons a year for the next ten years.

The product of the Guayule shrub of Mexico amounted last year to 15,000 tons, but as the shrub is destroyed in extracting its latex and as it has not yet been proved whether it can be readily and quickly reproduced, this Mexican product is an uncertain factor in estimating future supplies. The immediate available increase must come, therefore, from the Amazon and the Far East, the two making a combined annual increase, for the next few years, of about 8,000 tons, or a trifle over 10 per cent. of the world's present supply.

With the present constantly increasing demand it is fairly obvious that plentiful rubber is a condition not likely to be realized in the immediate future. Five years from now, when the plantations now in their infancy—or perhaps more properly in their adolescence—have reached a productive age, the story may be different.

THE SERVICES OF A CHEMIST.

THE fact that a large number of progressive rubber corporations have during the past year considered the engagement of a chemical engineer or even a laboratory chemist prompts us to make some observations on the compensation offered to these "advisory" employees. The chemical engineer may be viewed as the running mate of the superintendent. If we accept this as a rational possibility, we might add that the superintendent must turn out a certain volume of goods per week, and see that the cost of labor is kept as low as efficiency will permit. The chemical engineer must give the superintendent raw materials which measure up to a certain standard, must trace defective products to sources not

immediately visible to the naked eye, and must adjust the chemical processes in order to maintain the health of the operatives and indirectly make it possible for them to render the most efficient service.

We will usually find that the superintendent is a man who has been in the world of commerce and industry since the day he left preparatory school. This has made it possible for him to gain a fund of practical, empirical information and to be almost if not totally self-supporting since the day he left school. After his preparatory he entered college for a four-year course, which led to the certificate for "Bachelor of Science in Chemical Engineering." If he so desires he may spend two or even three years additional at a university, and learn the methods which are used in research work, in discovering the cause of certain effects. We might call it Chemical Philosophy, or, to use a factory expression, we might call him "trouble man for chemical processes." This is the work which develops in a chemist the bumps of "ingenuity," "initiative" and "farsightedness," and these are after all, the properties which make a chemist of indispensable value to the manufacturer who has a desire to increase production and lower the cost of production while increasing the quality of his products.

A chemist who cannot lay claim to these properties is of very doubtful efficiency as a chemical engineer in a rubber mill. Now let us turn from these necessary qualifications to the "dollars and cents" side of the course which was necessary to obtain the same. The total expense of the college course has averaged for each year between \$300 and \$400. This may then be multiplied by the number of years which we would allow our student, say four years preparatory school and six years of college study, at the end of which he has reached his twenty-fifth year. From this data we obtain the figure of \$4,000—for educational expenses. Next we may figure the earning capacity of an intelligent man (between the ages of 15 and 25) as averaging \$1,000 per year. In total, an intelligent man would earn in these ten years, in round numbers, \$10,000. His living expenses are equal to or less than those of a college student, so that these items counterbalance. The trained chemist at the age of 25 finds himself without these \$10,000 and without these \$4,000. He has, however, invested time and labor and thought equivalent to this amount in a thing which we may call "knowledge."

This brings us to the still more interesting question: "What interest does an intelligent manufacturer expect to receive from his invested capital?" You may answer 6 per cent. or even 12 per cent. If we take the lesser rate, we find that \$14,000 should yield \$840. This you will note is not the earning capacity of a graduate chemical engineer, but only the fair interest to which his invested capital entitles him. To this we may add whatever we consider to be a fair salary for an employee who makes it possible for the corporation to save from \$5,000 to \$100,000 per annum. The question, which is a logical consequence of the last statement is this: "What per-

centage of the total saving wrought by a chemist should be paid to him for his services?" and the answer to this query is probably found in the law of supply and demand. Thus, if it is possible to secure the services of a carefully trained man, twenty-five years of age, for the same money that is paid to a good stenographer, this would be equivalent to the statement that this university trained chemical engineer was (in this world) entitled only to the interest on his investment, but was impotent to earn a fair salary over and above that sum. These thoughts are an outcome of various inquiries which have been made during the past year for rubber-works-chemists and the "wages" which have been offered. In certain instances, the corporations admitted that they had exhausted their fund of information, and had therefore decided to draw into their works an expert rubber chemist to supervise the processes, examine the raw materials and turn out products measuring up to definite specifications.

The advent of the chemist in the rubber works took place but a short time ago; in fact, it was not until 1900 that any notable number of firms manifested any interest in the matter. After the university trained chemist has invested time and money in studying methods of investigation, the manufacturer is well justified in making an appropriation which will insure the highest dividends.

COMPETITION OR RESTRAINT.

THERE has been for years an accepted dogma that "competition is the life of trade." As it stands the phrase means not only that which is fair, honorable and intelligent, but dishonest, suicidal criminal competition as well. The truth is, that competition is often a serious injury, and sometimes the death of trade. In the rubber business one needs only to hark back to the days of rubber car springs to have a conclusive example of how keen competition may damage and destroy. Unfair and foolish competition is always a curse, just as grasping and selfish "restraint of trade" is an evil. Whether either can be wholly controlled, is a question yet to be answered. So far, manufacturers who follow economical and original methods of manufacture, and who possess the ability to market goods of unvarying quality under registered brands, suffer the least, either from competition or restraints. It would be a calamity if competition were to cease out of the land, for it would mean the paralysis of effort, the death of invention, while the abolition of all trade restraints would result in industrial anarchy.

WHY SHOULD ANYONE DELIGHT in calling a rubber-soled shoe a "sneaker"? Possibly, when the term was first coined, if the setting was right and the utterance timely, it was worth a laugh. But its constant iteration has worn off all of its mirth producing significance, and the word at present is neither cute slang nor good English. It is descriptive, of course, if the wearer sneaks. But it is not euphonic, elegant, nor in good taste. If it is persisted in the dictionaries will in time be compelled to adopt it—another stumbling block in the way of pure English.

AS A COAGULANT for the latex of *Ficus elastica*, Dr. O. v. Faber, head of the Sugar-Laboratory in Soerabaja, Java, recommends the following mixture: Cream of tartar, 3 per cent.; formaldehyde, in the shape of formalin, 0.5 per cent.; carbolic acid, 0.5 per cent.; water, 96 per cent. The cost of a bottle of the mixture is said to amount to but a few cents.

REFRIGERATION IN RUBBER MANUFACTURE.

THIS was the title of a paper communicated to the International Refrigeration Congress held last October at Vienna. From the translation of it which appeared in *La Revue Générale du Froid* for December, 1910, published at 9 Avenue Carnot, Paris (17) we give herewith the following fairly exhaustive summary of its contents.

There are two applications of refrigeration in the rubber industry, one in connection with the manufacture of fine cut sheet and the other with the recovery of naphtha from spreading machines. With regard to England the most extensive and widely distributed application of these freezing processes is found in the various card cloth factories in Lancashire and Yorkshire as in these works the freezing machinery is very generally installed for the double purpose of condensing the naphtha from the spreading machines and of consolidating the circular rubber blocks preparatory to their being cut into sheet. In these works, however, as in the few large rubber works where fine cut sheet is produced, there is considerable variation in the details of the refrigeration machinery and process adopted.

With regard to cut sheet, a moderately low temperature suffices for perfect solidification of the block to the core. If the temperature is too low the block would be of uneven consistency, as the sudden solidification of the outside would prevent the cooling of the interior which would remain soft and unfit for cutting. The best way of freezing a block is to put it in the open air in winter weather, but as the British winters are very variable and as the demand for cut sheet is general throughout the year, all the factories have found it necessary to employ refrigeration, and nowadays there are no summer stoppages in England at works where this was not uncommon in the past, as the modern procedure includes refrigeration of the work rooms. The author disclaims any intimate knowledge of the state of affairs regarding refrigerating on the Continent or in America, and does not claim that present-day procedure in England represents the latest improvements, though he claims that English cut sheet still holds the premier position as to quality. Alteration in refrigerating procedure might possibly be advantageous as regards economy, but he does not look for any improvement in the quality of the product.

It is not unnatural that the author should feel compelled to show some reserve with regard to giving details of the procedure at the factories, but even in the absence of full details the descriptions which follow are of interest. At the india-rubber works of Messrs. Chas. Macintosh & Co., Limited, of Manchester, the freezing of the blocks was effected for many years by immersion in the well-known mixture of ice and salt. Now, however, the firm have a very complete installation which includes an ammonia machine for freezing the blocks and also a sulphurous acid machine for cooling the large workroom in which the cutting machines are placed. The ammonia machine is situated in a chamber insulated with charcoal, and the blocks stand herein for a period of time which represents a considerable saving compared with the ice and salt method. The workroom is also insulated with charcoal and kept at a temperature of about 50 degs. Fahr. during the summer months, the water dripping on the knives being also cooled. Sheets, of which 160 go to the inch, are now being cut in summer in this room. At the card clothing works of Messrs. Horsfall & Bickham, at Pendleton, Manchester, the arrangement is rather different. Here the artificial freezing of blocks was initiated about 40 years ago, the plant being designed also for the recovery of naphtha. The freezing machine is after Siddeley & MacKay's patent, in which ether is used, and was put in by the now defunct firm Arrowsmith, Siddeley & Co., of Liverpool. These machines in the various card cloth factories give a uniform recovery of 50 to 60 per cent. of the naphtha used.

For freezing the blocks a wooden tank, 12 ft. square, is set into the ground and is well insulated by sawdust. The tank is filled with brine circulating from the refrigerating plant, and the circular blocks are put into tightly fitting iron cases fixed in the tank. The brine pipes passing through the cutting room assist in reducing its temperature.

At the card cloth factory of Messrs. John Whiteley & Sons, of Halifax, Yorkshire, a branch of the English Card Clothing Company, an ether machine is used for freezing the blocks though the process adopted differs somewhat from the two to which reference has been made. H. L. TERRY, F. I. C.

"THE INDIA RUBBER WORLD" HERBARIUM.

THE illustration shows some of the many specimens of leaves and flowers of rubber producing trees which were pressed and mounted in the Botanic Gardens, Trinidad, by a botanist who is specializing on rubber producing species. They are



FROM "THE INDIA RUBBER WORLD" HERBARIUM.

mounted on Bristol board, 12 x 18 inches, are glass covered and framed. They are notable as being exceedingly perfect and form the nucleus of a new feature of THE INDIA RUBBER WORLD library—a rubber herbarium. The species shown in the illustration embrace the following well-known rubbers:

- | | |
|--|-------------------------------------|
| No. I. <i>Cryptostigia grandiflora</i> . | No. V. <i>Landolphia Kirkii</i> . |
| No. II. <i>Hevea Brasiliensis</i> . | No. VI. <i>Ficus elastica</i> . |
| No. III. <i>Castilloa elastica</i> . | No. VII. <i>Mimusops globosa</i> . |
| No. IV. <i>Funtumia elastica</i> . | No. VIII. <i>Manihot Glazovii</i> . |

THE UNITED STATES consul-general at Hong Kong states that an official report estimates the number of Pará rubber trees under cultivation in Cochin China at over 1,000,000, of which about 15,000 are being tapped.

India-Rubber in Dutch Guiana.

By The Editor of "The India Rubber World."

THIRD LETTER.

A Morning Ride to the Balata Pier.—Dutch Negro Workmen.—Government Balata Concessions.—Bush Negroes.—Balata Trees 400 Years Old.—Locating the Trees.—Balata Crews.—Tapping.—Coagulating.—Bringing the Gum to Market.

VERY early one morning the Balata Man came around in a stylish little trap drawn by the liveliest horse that I had yet observed and invited us to go out and inspect a shipment of balata that had just arrived from the interior. Our acceptance was prompt and grateful. We whirled down Keizerstraat, which was crowded with men and women on their way to work, down by the huge market sheds where sat scores of country negroes with baskets of fruit, eggs, poultry and every variety of tropical edible, animate and inanimate, which could possibly find sale in the city. Then out through the suburbs and up to the balata warehouses.

Balata arrives in bales weighing about 250 pounds each, the sheets folded together, piled up and then bound with bush-rope. One of the first things down on the receipt of a shipment is the inspection. The sheets are cut apart, partly to allow of further drying, and partly to detect foreign material, particularly sand. It is then baled again and weighed, the government royalty paid and it is ready for shipment abroad. It is here also that boats are outfitted for balata gathering and for the gold fields. One boat was loading while we were there. It lay some eight to ten feet below the pier and one negro and four coolies were trying to induce a mule to step up on a narrow plank and then descend into the boat. The mule knew that the plank was so awkwardly placed that it would

slide off, and wisely refused, so they blindfolded her with a piece of burlap so loosely woven that she could see right through it. Then with a man down in the boat pulling at the halter and four pushing from behind she suddenly jumped and landed safely in the bottom of the boat, incidentally catching the man below by surprise and knocking him heels over head under one

of the seats, and that is about the way the workmen do everything. They are slow, clumsy, and lack mechanical ability. It does not do to be too impatient or to try to hurry them, for then they hasten but always do the wrong thing, and their misdirected energy and ingenuity in accomplishing what you do not want done is appalling. They are willing workers and also exceedingly willing loafers.

The Balata Man told of being far up the river at one time with a lot of balata awaiting shipment. This, some negro boatman agreed to take to Paramaribo for twenty guilders. It was seven days' journey and they had been four days rowing when they were overtaken by a steam launch. This they hired to tow them the rest of the way, contentedly paying twenty guilders for the service.

The balata lands are almost wholly owned by the Crown, but are exploited only by individuals or companies under govern-



LAGG'S APPLIANCE FOR CLIMBING BALATA TREES.

ment concessions. The concessionaires pay $\frac{1}{2}$ cent per hectare (2.471 acres) for prospecting. Then they pay 4 cents per hectare for ground rent. Added to this is 4 cents per kilogram export tax which must be paid within eight days of its receipt. The only other export tax in Dutch Guiana is a small one on gold. It is probable that when cultivated rubber is produced in quantity it will be required to bear its *pro rata* of



ALONG THE RIVER BANK.



BALATA BOAT.

the state burdens. The policy of the government has never been to embarrass the planters; on the contrary it has helped in many enterprises, even going so far as to loan money at a low rate of interest to many of the planters whose estates suffered through disease.

Speaking of Crown lands and the wilds, one at once remembers the bush negroes. They were once servants, perhaps slaves, who had gone into the hinterland and made little settlements where they live by hunting, fishing and as little farming as possible. In some respects they have lapsed into savagery. They speak a mixture of Dutch and Indian, a language of their own which is analagous perhaps to the pigeon English of the Chinese. They are tractable and friendly if treated well and are sometimes used by planters with excellent results. They are very honest and while they often borrow, a debt with them is a sacred obligation. Incidents are cited where a man has traveled miles to town with a little money accumulated penny by penny for a long time to pay a debt contracted by his grandfather years before.

I think it was Jenman who estimated that many of the mature balata trees that he saw in the Guianas were at least 400 years old. Whether he hit it within a century or so does not matter. Certain it is that the tree is of slow growth, and as an ordinary planting proposition is not to be considered for a moment. The tree which is locally known as the "bully" or "boela," is botanically the *Mimusops globosa*. It is found in French, Dutch, and British Guiana, in Venezuela and indeed in various parts of Brazil. It is very common in the Guianas, growing on sandy reefs that run in all directions through the lower country, and also along the margins of streams in the uplands.

The beginning of gathering is the exploration party that locates the trees. This consists of 8 or 10 men at 60 cents a

day, under a foreman at 80 cents a day, who go out into the bush in September, October and November, and stay for weeks at a time, until they have located a section where the trees are thick enough to make gathering worth while. A report is made to the government concerning the location and the right to gather balata is obtained. The laws are very strict concerning tapping and destruction of the tree or over tapping is expressly prohibited. Only one-half of the bark area is tapped in one year, and that area is rarely tapped again. The reason is that the bark grows over the wounds in irregular forms, making it almost impossible to secure a surface that can be bled in a satisfactory manner.

The gathering or tapping begins in January. Bush negroes are not used in this work, nor are the coolies. The laborers are invariably town negroes who have been contracted for before the holidays. They have also secured advances of money of which they invariably spend every cent in Christmas and New Year's festivities. It is quite a task to round up these contract laborers and very often the police are forced to lend a hand in getting the expedition started. The food supply which the foreman looks after consists of flour, split peas, molasses, salt, fish, beef and pork, tobacco and matches, while each man carries *calabashes*, a 5-gallon tin can, a cutlass and a queer tin canister for a trunk. They go by boat up one of the many rivers which may take a week or two to the place they have picked out for the central camp. Here 25 or 30 men make their headquarters. As soon as the shelters are built, and they are erected very quickly, the tanks for coagulating are made. They are built on log foundation, the bottom being about 3 feet from the ground, and are shallow wooden pans 10 to 12 feet long and 6 to 8 inches deep. They are made from boards split from palm tree



BORDERS OF A BALATA FOREST.



BUSH NEGRO VILLAGE.



INDIANS MAKING CASSAVA BREAD.

trunks and the cracks are carefully stopped up with balata until watertight. A cover is also made to keep out the rain, and to prevent insects, twigs, etc., from falling in.

The collectors after breakfast spend a short time discussing the weather probabilities, and if it bids fair to be a day free from rain they scatter for the parts of the forest where they have located untapped trees. In addition to cutlass, calabashes and collecting can, each workman constructs a rough ladder of poles and bush rope.

Tapping is begun at the foot of the tree, where great gashes are cut in the tough bark, under which a *calabash* is placed. Then on up the tree the worker goes cutting deep grooves two inches wide, crisscrossing them so that the milk will flow down a main channel into the *calabash*. Eight or ten trees is a day's work for one man and from them he should fill the 5-gallon tin. This should give about 20 pounds of balata. The gatherer starts back to camp about 3 in the afternoon, empties the latex into his tank and spends the rest of the day far into the night in eating, smoking and story telling of the weirdest sort.

The gathering being done at the beginning of the rainy season, as the milk flows best then, great care must be exercised to avoid the frequent showers, as water injures the product and often stops coagulation. The drying or coagulation is very simple. The tank is set out in the sunlight for several hours and a thin skin soon forms on the surface of the milk. After a time when this is thick enough it is peeled off and hung up to dry. This film looks like raw hide and is of a dark red color. The dishonest gatherer will fold the wet sides of the sheet to-

gether before it has thoroughly dried out and by so doing gets greater weight. Normally, the drying continues for about a week, but the product shrinks for a month or more. The average gatherer brings in from 400 to 500 pounds, while experts in good sections have been known to gather as much as 1,000 pounds in a season. When the work is finished camp is broken, the balata is taken to Paramaribo; the men are paid whatever balance is due them, and they promptly and joyously spend it all in a single night.

The sheet balata from Suriname is the standard, and is worth much more than block, which latter is never as dry, and often



USUAL METHOD OF TAPPING BALATA TREES.



MARKET, PARAMARIBO

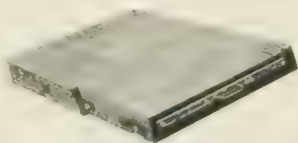
contains impurities. Sheet balata costs to collect from 40 to 45 cents a pound; 20 cents of this goes to the laborer who is paid only for the gum he turns in. The other costs are a small commission to the foreman, general outfitting expenses, government tax, and so on.

Balata has been much slower in coming into use than has almost any rubber or gutta. For a long time it was classed among the intractable gums. In 1890 the world could find a use for only 200 tons of it. Little by little, however, it found uses chiefly as a substitute for gutta-percha, until in 1900, 400 tons were needed.

[TO BE CONTINUED]

CUTTING BOARDS AND BLOCKS.

EVERY rubber factory however small has some place where cutting is done. It may be only a chopping block on which with die and mallet the work is done. Or it may be a great room where scores of skillful knife wielders stand over the latest types of cutting boards and turn miles of sheeted stock



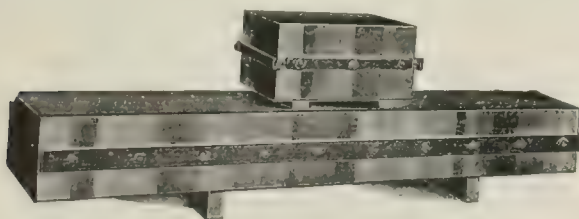
REVERSIBLE CUTTING BOARD.

into shapes adapted to making up. And this leads up to the subject of prepared surfaces upon which the cutting is done. It will be at once apparent that the substance of which they are made must be one that will not injure knife or die. Wood being the cheapest and most available, is what is generally in use. Some cutting, however, is done on hard slabs, some on sheets of heavy packing and some on zinc. But nearly all of it is on wood and the cutting block and board are today as scientifically



REVERSIBLE CUTTING BOARDS.

made as any intricate machine in the factory. As cutting with or across the grain would cause splintering, it is done on ends of boards. That is, strips of wood are placed end up and securely bolted together, giving a surface that cannot splinter and that finally wears away in fine powder; then it is planed smooth and is as good as new. Blocks for dieing out, both by hand and machinery, are made in the same way. Indeed, so great a business has this grown to be that factories are devoted to the production of these goods alone. They are situated where pine



DIEING OUT MACHINE BLOCKS.

and maple are plentiful and with great drying kilns and modern machinery they turn blocks out by the thousand. Not alone to the rubber trade do they cater, but to shoe, glove, envelope, harness and corset factories, to artificial flower makers, to packers and butchers, to stencil works and scores of lesser industries.

MORE ABOUT BALATA BELTING.

THE constantly increasing use of balata belting in the United States naturally prompts the inquiry as to why, up to the last year or two, its manufacture has not been in American hands. The answer lies first in the fact that most American rubber factories were equipped to make rubber belting, which they felt fully covered the field, and they were, therefore, averse to laying down a separate plant for balata work. The second reason is that they were unwilling to put into its manufacture the attention to fussy details, which is one of the chief reasons for the great success the English, for example, have made of the balata belting business.

Among the many reasons for the increasing use of balata belting is the fact that it is free from many faults which most other belts have. First, it is practically unaffected by atmospheric changes, and may, therefore, be used in paper mills and similar places where damp and moist atmospheres predominate. It is not affected by acid and other injurious fumes. It also remains pliable under almost every climatic condition, and therefore transmits practically the full horsepower at all times. It needs no pulley covering nor other article to make it adhere as do most other belts. In its manufacture, a more closely woven fabric is used, than in canvas belts coated with rubber or those which are treated by processes similar to, or by the Gandy process. This, of course, gives a belt of great strength, and one that is less liable to stretch.

In making this type of belt, the fabric is dried and then coated with balata composition in a solution. Such solvents as naphtha, benzol, or any solvent which will dissolve crude rubber, are used. The fabric is then run over what is known as a spreader, which is a device for spreading the cement on the fabric by the use of a rubber covered roll and an adjustable knife, which enable the operator to put on a thick or thin coat of cement and also to permit of using different thicknesses of fabric. After the fabric has gone over the roll and is coated with cement, it passes over a steam table or coils of steam pipes, which being heated quickly dries the cement. After the fabric has received the proper number of coats of cement it is then either cut into proper widths or is folded over upon itself to the thickness required, according to the width and horse power to be transmitted. When it is cut, this is done on a machine similar to that which is used in the manufacture of rubber belting. The plies are next pressed more firmly together, either by the use of a hydraulic press or by a set of rolls heated to the proper temperature. After this is done, the belts are practically finished as they are not vulcanized, which is why, in part, that the belt is so much more pliable and retains its life to such a remarkable extent.

We believe that the time is not far distant when many American manufacturers will take on the manufacture of balata belting. It will be the means of saving to themselves some business they are bound to lose if they do not do so. While it may never entirely supplant rubber and leather belting its use is rapidly growing, and no one who has once used balata belting will ever go back to any other. There are no especial secrets in the manufacture of this belting which the up to date manufacturer cannot guess, and as suggested in the beginning of this article, it is only due to the infinite care in the details of its manufacture that the foreign manufacturers have been enabled to monopolize this field.

ACCORDING to the annual report of the director of forestry of the Philippine Islands, for the year July 1, 1909, to June 30, 1910, there were included in the exports of forest products from the islands for the period in question, 157,731 kilograms (347,008 pounds) of rubber, and 95,082 kilograms (209,180 pounds) of gutta-percha. None of the gutta-percha and 225,526 pounds of the rubber, were exported to the United States.

The India-Rubber Trade in Great Britain.

By Our Regular Correspondent.

EARLY in January the price of fine hard Pará fell for one day, at any rate, to 5s. per pound, at which price a leading manufacturing firm told me they could get enough to cover their requirements for some time ahead. This price the culmination for the moment of a steady and continuous

THE PRICE OF RAW RUBBER.

fall in values, though, of course, satisfactory to the trade, is by no means to the liking of shareholders in plantations in a stage of evolution and much less to company promoters who still have some properties up their sleeves. This, however, goes without saying, a point of greater interest and uncertainty being the cause of the decline. Here one is on thorny ground as unanimity of opinion by no means prevails among those whose position entitles them to credence. I do not profess to be behind the scenes myself, and the following explanation is merely the statement at second hand of one who has had special facilities for probing the situation. In the early months of last year, when it was foreseen by certain astute minds that the time had come for company flotation on a comprehensive scale, a good deal of rubber was kept back from the market, so as to keep prices at a high level. The lock up of capital was met by advances from the banks, both London and provincial, on the security of the rubber. After a time, when the price commenced to fall, owing to the obstruction of buyers, the banks required further securities which were forthcoming when hope existed that the setback would prove to be only temporary. As this did not take place, the natural result was that the rubber was gradually put upon the market. Of course, the normal factors of supply and demand also exerted their influence, but according to my authority the statement made last year to the effect that rubber was being kept off the market, was certainly barred, in fact, though at the time the existence of any such practice by capitalists was pooh-poohed by technical writers generally. Since writing the above, fine Pará has been down to 4s. 10d. [= \$1.18] per pound.

THE forthcoming legal action to which I referred a few months ago may be expected to mature between now and Easter, and in the meantime it is not surprising that some projected commercial developments have been arrested. In the

REFORMED RUBBER.

case of certain companies formed in the past to exploit patents concerned with the production of mechanical rubber goods on altogether new lines, the manufacture reverted to procedure, but slightly varying from that of the ordinary rubber works. It would not altogether surprise me to hear that reformed works, where equipped with ordinary rubber machinery, took to producing new rubber goods as part of their general business, thus coming into direct business competition with the established rubber works. In this eventually one can hardly prognosticate profits on the same scale as hinted at in a prospectus which is based on the exploitation of a patent certified as entirely novel by this or that eminent K. C., though not directly concerned with reformed rubber. An instance of this procedure will, I understand, be furnished by the Reinforced Rubber Co., Limited, who contemplate the manufacture of some ordinary mechanical rubber goods at their works at Hull. A new company, the Southern Rubber Co. (1910), Limited, was registered at the close of the year, with a capital of £90,000 in £1 shares with the stated objective of manufacturing and dealing in rubber gums, substitutes, natural or artificial, products of waste rubber, acting as selling agents, etc. A previous company, from which this has sprung, has been located for some time at Battersea, London, and its principal business

has been the production and sale of certain reformed rubber goods, under royalty from the owners of Gare's patents. The location of the new company is at Willesden, not far, but in quite distinct premises, from the Simplex Rubber Co., Limited, the proprietors of Gare's patents. Mr. C. M. Greenwood and others prominently connected with the old company are on the directorate of the Southern Rubber Co., Limited, at Willesden. The action for libel brought by Mr. G. F. Berry, of the Premier Reforming Co., Limited, against Sir Chas. B. Lawes-Wittewronge, Bart, came before the High Court on January 19 and was adjourned at the close of the day at the suggestion of the judge, to see if an agreement could not be arrived at between the parties. This agreement was subsequently effected and the case was thereupon withdrawn. Briefly stated, the action arose through a letter from Sir Chas. Lawes-Wittewronge to some of the prominent newspapers the day after the prospectus of the Premier Company, Limited, appeared in December, 1910, imputing incorrectness to some of Mr. Berry's statements. The letter also stated that the master patent for reforming rubber was held by the writer, who had been working it for some time at the works of the Millwell Rubber Co., Limited, now located at Harpenden. This patent, I may say, is that of Roux, with which that of Karavodigue, is now associated, these patents being prior to that of Gare. I heard it the time that the public subscription to the Premier Company was decidedly affected by the above letter. I think I am right in saying that Sir Charles is the second baronet, the honor having been conferred on his father, for his services in connection with the scientific development of agriculture. Mr. Berry is a relative of Mr. Rawson, the promoter of and consulting engineer to the Premier Reforming Co., Limited. Mr. Rawson, who is a son of the late Sir Rawson-Rawson, K.C.M.G., has been for some time engaged in the flotation of companies.

ATTENTION was drawn to the insidious character of suction gas, at an inquest held in January, on a man employed at the works of the Rubber Heel Manufacturing Co., Limited, at Chatham street, Clayton, Manchester. Death was shown to be due to carbonic oxide poisoning, and seeing that the use of suction gas, which is odorless, is largely increasing, too much emphasis cannot be laid on the fact that it consists largely of this very poisonous gas. This company formerly concerned only with reclaimed rubber chemicals, etc., is now making heel pads on a large scale under the management of Mr. R. E. Gregory, late of Capon Heaton & Co., Limited, Birmingham, and formerly departmental manager at Chas. Macintosh & Co., Limited.

FATALITY AT A RUBBER WORKS.

It has taken a long time to convince the railway companies that rubber solution, made with carbon tetrachloride, is non-

NON-INFLAMMABLE RUBBER SOLUTION.

inflammable and therefore not dangerous. At least, however, the point has been recognized, with the result of the removal of the very onerous burdens which have hitherto been imposed upon those who have forwarded this commodity by rail. I don't know exactly whether shipping companies have followed the railways, but they have always been very strict about rubber solution. Only a month or two ago a heavy fine and confiscation of the goods was ordered at Liverpool in the case of a shipment of channel cement, which was really rubber solution incorrectly described. At a later stage the weight of the penalty was largely reduced, though the enormity of the offense was insisted on. With regard to the use of carbon tetrachloride the price, as compared with naphtha, has always

been against it and more recently attention has been strongly drawn to its toxicity and other disadvantages. I notice, however, in a recent patent by Messrs. Pichou and Truchelut of Paris, that they propose to add spirit of turpentine or some hydrocarbon of the terebenic series, to insure the stability of tetrachloride of carbon under conditions of use where, when used alone, it is apt to decompose. The non-inflammable quality is not affected by the turpentine. For rubber solution they also propose to use, with the tetrachloride of carbon, a considerable proportion of light petroleum spirit—some turpentine is added to this to prevent decomposition, and the adhesiveness of the rubber solution is augmented by the addition of an alcoholic solution of gumlac. This patent is seen to cover a good deal of ground, and its claims will doubtless be scrutinized by those who propose to utilize it. With respect to the adhesive bodies I have understood that rosin has been employed for some time as an addition to rubber solution, though I cannot say that I have any first-hand knowledge on the matter.

So our friends, the planters, are not to have it all their own way. An influential committee has been formed to see that at the forthcoming exhibition indigenous rubber receives that due meed of attention to which it is entitled, both by reason of its recognized quality and from the truth of its output compared with that of "its pushing and youthful rival." Perhaps some move of the sort is desirable in the case of an exhibition which takes shillings from the pockets of the public at its doors, and any exhibits or demonstrations, which have for their object the removal of misconception, can hardly be considered superfluous. At the same time it must be remembered that the casual visitor who owns a few shares in this or that plantation does not exercise any influence, beneficial or malevolent, upon the rubber markets. After all, it is the manufacturers who, though comparatively insignificant in number, put the values on the various brands of rubber, and as far as fine Pará is concerned it would be merely preaching to the converted for the Earl of Erroll and his colleagues to expound the virtues of the Brazilian product. With regard to the superiority of wild over cultivated Pará, for the best purpose of the trade things remain *in statu quo*, in the manufacturer's opinion, despite erudite publications to the contrary from this or that laboratory. In the case, however, of other brands of rubber, especially those from East Africa, it may be a more difficult matter to keep the pushing plantation product in its proper place, though in view of the fact that the manufacturer must remain the final arbiter as regards demand and value, the association can hardly exert any great influence commercially. If wild rubber is being ousted from the markets through no fault of its own, but merely by the wiles of designing competitors, then the formation of the new association is called for in the interests of commercial morality. *Obita principis* is a valuable maxim and granted the existence of the evil, no better opportunity than the forthcoming exhibition could be seized, in order to demonstrate to the public and the manufacturer alike, that the wild rubber industry is by no means in a moribund condition.

AFTER having had one of Warne's well-known crocodile tobacco pouches in use for a number of years, I decided the other day to replace it by one with a cleaner exterior. The intention matured at a suburban tobacconists where, after asking for a crocodile pouch, I went off with what I took to be one. I did not examine my purchase closely at the time, and was rather surprised to find next day that what I had got was the cobra pouch (registered) made in Austria. I don't think that there was any intention to mislead; my impression is that the woman knew very little about the various pouches in stock. But, be that as it may, I am not airing a grievance and only refer to the matter, because this Austrian product is the near-

est approach to a genuine Warne crocodile rubber that I have come across in my experience. I can recall many trials which have been made, here and there, to produce a pouch equal to Warne's, but in my experience the result has always been unsatisfactory from one cause or another.

On the morning of January 31 a serious fire broke out at the London premises of the Almagam, Limited, at 374 Euston road, damage to the amount of several thousand pounds being done. This company was floated during the rubber boom of last year to work a special process for retreading motor tires, the principal mills being at Harpenden, where all business in retreading will be carried on until the London premises have been put into order again.

FIRE AT A WORKS.

AN AWARD FOR PLANTATION PARA RUBBER.

FOR the best samples of plantation Pará rubber, shown at the International Rubber and Allied Trades Exhibition, opening in London in June, the *India Rubber Journal*, London, offers, as a prize a silver shield, value 100 guineas (\$500).

Entries, restricted to countries exhibiting at the exposition, must be made to the Award Committee, International Rubber



THE INDIA RUBBER JOURNAL SHIELD.

and Allied Trades Exhibition, 75 Chancery Lane, London, by Monday night, May 1, letters postmarked May 1 will be accepted.

Exhibits, limited in number to three for each competitor, produced wholly on the property of and prepared for market by the exhibitor, must not weigh less than ten pounds, and must be in the hands of the Award Committee, Royal Agricultural Hall, London, IV., carriage paid, not before June 15 nor later than June 20. They will constitute a special group, classified as the *India Rubber Journal* Shield competition.

RED POUCHES.

Mexican Rubber Notes.

NEW PROCESS FOR COAGULATING "CASTILLOA."

TO THE EDITOR OF THE INDIA RUBBER WORLD: At the recommendation of a leading rubber planter here, I take the liberty of giving you some information about my new process for the coagulation of the latex of *Castilloa*, since it is known to me that all novelties along this line are of interest to you.

In June, 1910, I obtained in Mexico a patent for the chemical working of crude rubber, and built, in company with Mr. Karl Schweickhard, general manager of the local house of Harburger & Stack, a New York firm, the very first factory for the development of this process; we have been working seven months with good results. Already, in spite of the tremendous increase in the price of crude rubber in the last year, which for a while made buying up of the latex impossible for us—we have shipped about 3,000 kilograms to the German market, for which we received an average price of 13 marks [= about \$1.40, gold] per kilogram, and for the gum resin, which is a by product of the process, we were paid 7 marks [= about 75½ cents] per kilogram. You will therefore see that the product of this process realizes a notably better price than the Mexican scrap.

The operation of my process is as follows: The latex which is bought up from agents in the plantations, is thoroughly cleaned in the wire sieve, the preserving powder prepared by me is stirred in, and then it is poured into cans, which are soldered up, and these are then ready for transport to the factory. Oftentimes these arrive in the factory only after 20 days' time or more, yet in good fluid condition, since the powder prevents the coagulation of the latex. Once in the factory, the latex is poured into great wooden containers and mixed with a substance which decomposes the resin and organic substances, in order to bring about more easily the separation of the same in the working in the engines. We possess here five rotary engines, which work the latex, and we have fifteen others in process of installation.

After the latex has for a certain time undergone in the wooden containers the influence of the chemical products, the rotary engines are filled with a gallon of latex, two liters of the compound necessary for the working added to it, the motor set in motion, and the engines operate with about 500 revolutions. After 20 minutes—often somewhat more—the rubber is ready. The pieces of rubber are then washed and pressed in the washing presses, then dried, and inside of 24 hours are ready to be shipped. The product left in the engines is passed through a

cloth filter and is in a few days dry, when it is pressed, and is the so-called gum resin.

With such an outfit as we have, we can manufacture up to 600 pounds of rubber a day; that is, when we shall have the above-mentioned 15 rotary engines in operation; say, inside of a month. The expense of this process amounts to 5 cents, gold, per gallon of latex; the yield on an average is 32 per cent. of rubber, without the gum resin, which amounts to about 6 per cent.

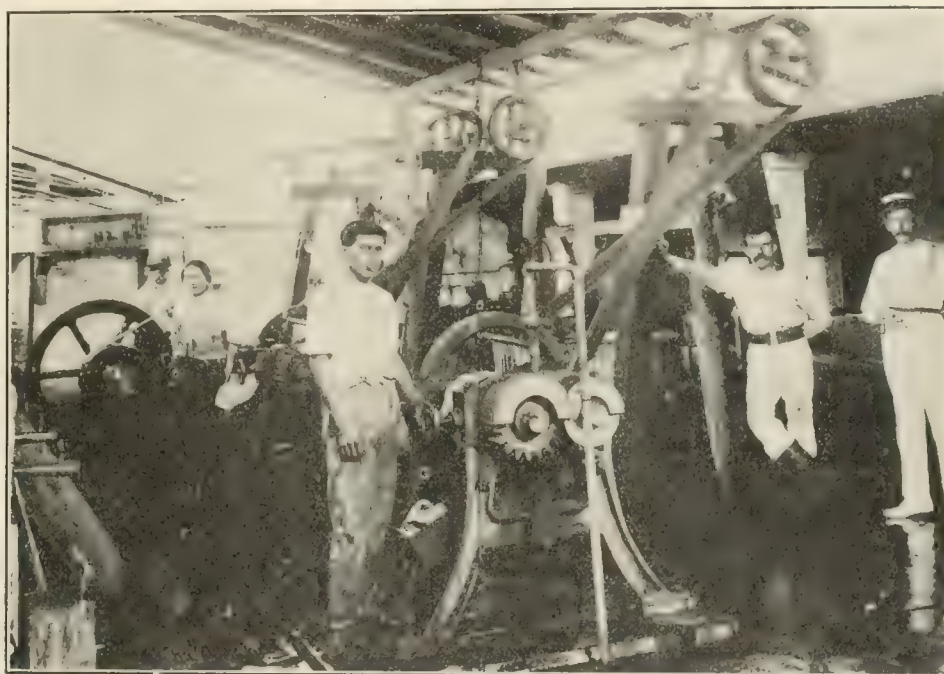
I should very much like, through THE INDIA RUBBER WORLD, to draw the attention of plantation owners to this really practical process, and would willingly dispose of the royalty of this patent to any interested person outside of the state of Tabasco. This process is easily applicable to the latex of *Hevea*, only the formula is somewhat different, and with regard to the sale of this I have an agreement with an English firm.

WILLIAM F. DERN.

San Juan, Bautista, Mexico,
Jan. 2, 1911.

[Editor's Note.

—On physical examination, the sample of *Castilloa* rubber appeared to be unusually good. It was exceedingly tough and showed absolutely no signs of stickiness. The sample of gum resin was in sheet form, and resembled balata to a degree, although it was a little more elastic. It was wholly without tackiness, and would be of value in rubber compounding.



FACTORY WHERE DERN PROCESS WAS FIRST USED.

STILL ANOTHER MEXICAN RUBBER.

THE Durango Commercial Co. has been incorporated in Michigan, with headquarters at Detroit, in that state, to exploit the Mexican plant known locally as Palo Colorado and shown by recent experiments to contain rubber to an extent which the projectors of this company think will justify a liberal investment of capital. The attention of the Michigan people was attracted to the matter by an American civil engineer, long resident in Mexico, who became interested in the plant in the state of Durango. His reports led some of his friends in Michigan, a year or more ago, to make an investigation, for which purpose they started out from the city of Durango, on the Mexican International railway, with the result that a concession has been obtained of a large tract of land on the west side of the Sierra Madre range. The location has not been more definitely stated for publication. A prime mover in this development has been John R. Allen, professor of mechanical engineering in the University of Michigan, at Ann Arbor, who has taken some of the palo colorado rubber to London, where it was reported upon favorably. The officers of the Durango Commercial Co. are Joseph H. Hunter, president; Henry W. Campbell, vice presi-

dent; John R. Allen, secretary; and Herbert W. Knoble, treasurer. The additional directors are J. Wilfred Thompson and Emil E. Keller. The office of the company is in the Penobscot building, Detroit. A communication from a Mexican correspondent in this issue contains some details regarding the palo colorado plant, which is said not yet to have been classified botanically.

LITTLE KNOWN RUBBERS OF MEXICO

TO THE EDITOR OF THE INDIA RUBBER WORLD: There has been recently a great deal of notoriety given to the different rubber and sap producing trees that grow along the Pacific coast of Mexico, but very little of the information can be considered as authentic, and it has been more prejudicial than beneficial. Such is the case with the notoriety given to the Palo Amarillo and Palo Blanco trees, which are known to contain a low percentage of rubber, and these trees are confounded with other plants that contain a much higher percentage of rubber. But on account of the general opinion existing that the two trees mentioned do not contain sufficient rubber to make its extraction profitable, the whole industry is condemned. It is my object to classify in a brief manner the several trees that are known to contain rubber, that grow in the states of Sinaloa and the territory of Tepic, and to show that there are trees that produce rubber in sufficient quantities to form the basis of a profitable industry.

Palo Amarillo.—There is very little Palo Amarillo existing on the Pacific; it is principally found in the states of Guanajuato, Durango, and Quertetaro. It is an anomaly that nearly every one who discusses rubber trees thinks that all the trees on the Pacific coast are Palo Amarillo. There is a very low percentage of rubber in this tree—insufficient to make it profitable.

Palo Colorado, or Chilte.—This tree is better known in Sinaloa and Tepic as Chilte. There it grows wild in abundance, and contains a very high percentage of cacho. From analyses made in Mexico City by Professor Villagran, it appears that this tree produces 37 per cent. of cacho, dry. Another analysis, made by Philip Schirdrowitz, PH. D., F. C. S., of London, gives the following result:

Moisture	26.44%
Resin	35.08%
Insoluble fibrous matter	1.20%
Rubber	37.28%

He says: "The separated rubber, a small sample of which I am enclosing, for your inspection, is in my opinion of a very fair quality and would, if obtainable at a reasonable cost, be of considerable commercial value. The separated resins are softish white crystalline bodies, which melt to a pale amber color, and I think it should be possible to find a market for them."

There is no doubt of the existence of enough trees from which to produce immense quantities of this rubber. One company now operating in the states of Sinaloa and Tepic have extracted 20 tons during the past two months, while merely teaching its employes how to extract it. One of the reasons why a good market has not been found heretofore is that the Indians collected it in small quantities, and sold it at a small price, but not in sufficient quantities to permit the market to depend on a steady supply. But now the immense tracts of land have been either purchased or leased, and the Indians have been stopped from gathering it.

Copal and Copalillo.—This tree is very similar to the Palo Colorado, or Chilte, the difference consisting mainly in the color of the tree, the Copal being of a dark earth color. It grows in the valleys principally, whereas the Palo Colorado grows up on the mountains. According to the different analysis made, the sap contains a much higher percentage of rubber than the Palo Colorado, averaging 52 per cent., dry. For many years the Indians near the coast have manufactured artificial flowers and curiosities from the dry sap, merely drying the milk, and forming flowers, small baskets, and the like, the color being a beautiful creamy white, and with a grain like ivory when dried. Several

tons of this rubber has been shipped to England, where it fetched 58 cents, gold, per pound.

B. N.

Torreón, Mexico, January 16, 1911.

MEXICAN PRODUCTION OF CHICLE.

THE output of chicle gum from Mexico—the chief source of supply—continues to increase, as shown by the following figures compiled from the annual statement of the federal treasury submitted to the congress now in session. Weights are expressed in metric tons and values in Mexican silver; the fiscal year ends June 30:

1905-06.....	tons	2,182	\$1,696,523
1906-07.....		2,166	2,144,724
1907-08.....		2,295	2,251,520
1908-09.....		2,624	2,447,041
1909-10.....		3,173	3,409,567

In spite of the increasing production, there has been a large increase in the market value. As shown by the figures above, the exports for the last fiscal year were larger by 45 per cent. than in 1905-06, while the average value per ton increased in five years from \$777.50 to 1,074.55—an advance of 38 per cent.

MADEROS PLANTING GUAYULE.

THE growing importance of the guayule rubber interest in Mexico was the topic of a recent conference between President Diaz and Ernesto Madero, a member of the important family of Madero concerned with guayule, according to an interview with a brother, Rafael Madero, printed in the *Mexican Herald*. After declaring that the late political troubles in Chihuahua were purely local in character, and with no sort of general significance, Rafael Madero is quoted as saying:

"My brother had an interview with President Diaz, but this meeting had nothing to do with the revolution. It was purely concerned with the guayule industry and concessions concerning it. You can see that we are not greatly worried about the outcome of this little uprising when I tell you that my brothers and myself are putting out thousands of acres of this rubber plant for future cutting. The exports of guayule now amount to something like \$30,000,000 each year, against \$14,000,000 of henequen and less of other products, so that we believe this rubber plant is destined to be the greatest agricultural factor in the republic.

"We are investing hundreds of thousands of dollars in plants for the manufacture of rubber from guayule and do you think we would do this if we believed the revolutionary propaganda of Francisco I. Madero would prevail? Well, I should say not. The results do not worry us, but, naturally, the fate of a member of our family, no matter how greatly he may have erred, is of the most vital interest, and there certainly will be trouble ahead for Francisco if he is caught on this side the line."

The leader in the recent uprising [see I R W, December 1, 1910, page 98], it will be remembered, was Francisco Madero, a nephew of the two brothers mentioned in this article.

NOTES.

A plant in Mexico known locally as *clavel de España* (Spanish carnation) which is mentioned in the *Bulletin* of the Pan American Union (Washington: January, 1911) is being studied as a possible source of rubber of value. It is stated to be abundant in the state of Sinaloa and in the mountains of Matatan. "The results so far obtained are satisfactory, and promise a success equal to that of the guayule plant."

Mr. Horace E. Levesley, manager of Hacienda "La Esperanza," in the State of Oaxaca, Mexico, the development of which estate has been in his charge from the commencement, 12 years ago, has been shipping rubber prepared from planted *Castilloa* by smoking it in a machine of his own invention, no coagulant of any kind being added to the latex. Specimens of this rubber sent to THE INDIA RUBBER WORLD, described as being 14 months old and since kept in the hot climate of Mexico, make a good showing in resiliency and strength.

Some Notes on Rubber Planting

NEU GUINEA CO.'S REPORT.

NEW GUINEA COMPAGNIE (Berlin) publishes the report of its executive committee and the business report of the directorate for the business year ending March 31, 1910, accompanied by the balance sheet for the period in question. The development of the enterprise during the year is reported as exceedingly satisfactory and the prospects for future progress favorable. The development of the plantations left nothing to be desired, and Director Dr. Preuss, who devoted five months to a thorough inspection of the properties, expressed himself as in every way satisfied with conditions and prospects. The rubber plantations in Iomba have been particularly successful; the total output amounted to 6,543 kilos, compared with 5,213 kilos the preceding year, 62 kilos being produced by *Hevea brasiliensis*, 3,056 by *Ficus elastica*, and 3,425 by *Castilloa elastica*. The area planted to *Hevea brasiliensis* was increased from 41 to 127 hectares, and the number of trees growing, alone and in conjunction with cacao, increased from 56,291 to 98,445. The balance sheet shows a total increase in valuation of 596,675 marks [= \$142,008.65] and profits of 1,466,913 marks [= \$349,125.29].

MEXICAN INDUSTRIAL PLANTERS' CO.

In a brochure addressed to the holders of the Junta Plantation bonds, the general manager explains at length, his failure to obtain a purchaser for the property, which he attributes to a variety of reasons, mainly to the preference displayed for properties located in British possessions, where British laws prevail, and to the fact that, for the most part, they are based on the cultivation of the *Hevea*, which is superior in constancy and quality of yield to the rubber producing trees grown in other lands. He holds and hopes, based on anticipation of a substantial revival of public and speculative interest in rubber properties, that a sale may ultimately be made, even if at a lower figure than was expected last spring. In the meantime, he states that the company will go ahead with its affairs, just as though no sale was, or ever had been anticipated.

KAMUNING (PERAK) RUBBER AND TIN CO., LIMITED.

ACCORDING to a recent report, the area of the company's property was 5,919 acres, of which 1,550 acres were planted. In addition there were 600 acres cleared which would be planted before the end of the current year. Up to June 30, 1910, there had been collected 67,046 pounds of rubber, which sold for £25,170 (\$122,489). The cost price, f. o. b., was about 1 shilling 6 pence, compared with a selling price of 7 shillings 6 pence. *Hevea* seeds were sold amounting in value to £338 (\$1,644).

TANDJONG RUBBER CO., LIMITED.

At a meeting of the directors of The Tandjong Rubber Co., Limited, held in Ceylon House, London, in the latter part of January, it was decided to issue 16,000 shares of new stock. These shares are a part of the available unissued capital of the company. It was proposed to offer these shares to the stockholders of register on the books on January 25, in the proportion of one new share to every five shares held.

SUMATRA PROPRIETARY RUBBER PLANTATIONS, LIMITED.

ACCORDING to the report dated April 30, there had been purchased 4,000 acres, of which 1,000 acres had already been cleared and 475 acres planted with *heveas* to the number of 51,373. The cultivation of coffee has not been taken up.

MR. REIMERS IN RUBBER PLANTATIONS.

MR. HERMANN REIMERS, for some years an important member of the crude rubber trade in the United States, latterly as head of the New York firm of Reimers & Co., and for two years past a member of Heilbut, Symons & Co., of London, has become a director in several rubber plantation companies working

in the Far East, and in the Anglo-French Mercantile and Finance Corporation, which latter has to do with the financing of rubber planting properties. At the late annual meeting of the Singapore Para Rubber Estates, Limited, in London, the chairman (Mr. Keith Fraser Arbuthnot), in discussing the satisfactory results of the past year, said: "What is in store for us during the current year it is difficult to say; but I am sure, with Mr. Reimers on the board, we shall have the best advice as to when to sell and when to hold."

CONSULAR REPORT ON GUTTA-JELUTONG.

THE United States consul general at Singapore mentions the United States Malaysian Rubber Co., Limited, as having turned out 325,000 pounds of their improved gutta-jelutong, though the period covered by the report is not specified. It is mentioned that as high as \$1.25 per pound has been realized. The factory which the company are erecting on the Karimon Islands, a short distance south of Singapore, is intended to handle all the jelutong received from concessions outside of Sarawak, Borneo. The report states: "It is claimed that early in 1911, when the mills will be in full operation, they can produce 6,000,000 pounds of jelutong gum, 10,000,000 pounds in 1912, and 12,000,000 pounds in 1913." Evidently these figures relate to the quantities of crude gum intended to be dealt with.

The shipments of gutta-jelutong from the Straits Settlements during the past two years are stated to have been as follows:

	1908.	1909.
To United States.....tons	3,983	12,824
To United Kingdom.....	647	1,009
To Continent of Europe.....	1,427	5,093
Total	6,057	18,926

Hitherto the arrivals of this gum in the United States have been received mainly direct from Singapore, with a small percentage from England and still less from Holland. It would appear, therefore, that a considerable quantity is utilized in Europe, though some years ago practically all the world's production was utilized in the United States. It may be noted here that nowhere outside of America are statistics kept of imports of jelutong as distinguished from india-rubber and gutta-percha.

THE WHITE ANTS FALSELY ACCUSED.

SAYS *The Automobile* in a recent issue: "The fondness that the white ants of the Malaysia territory show for the roots of rubber trees as a steady diet has the effect of devastating whole plantations at a time, and efforts are on foot to devise plans for the extinction of the white pests."

Will somebody be good enough to advise us as to just which plantations have been "devastated"? Our own belief had been that it was only an occasional tree that was attacked, and so promptly were the planters informed by the department of agriculture of a single and effective means of destruction of the pest that very little harm resulted. The fact is, insects of the ant type are plentiful wherever *Hevea* rubber is cultivated, and the starchy tap root must be guarded against these attacks, but nowhere has the planting industry suffered severely from them.

CENTRIFUGAL PROCESS FOR "HEVEA."

THE success attained in the use of the "Empire" centrifugal rubber collector in dealing with the latex of *Castilloa* in Mexico has been mentioned already. [See I R W—May 1, 1910, page 280.] From time to time the manufacturers have received high endorsements from planters in Mexico, one of whom wrote

recently. It is an excellent machine, superior to any on the market; in fact, it is quite unique. These machines will be used very largely, and we shall require a large number of them to handle all of our rubber. The centrifugal rubber now being shipped sells at from 1s. 6d. to 2s. more per pound than our other rubber."

The Empire Cream Separator Co. (Bloomfield, New Jersey) now report the return from Brazil of a representative sent out to test their machine on the latex of *Hevea*, which was done on the Diamantina plantation near Santarem, on the Amazon. The representative before his return visited London, where the product of the centrifugal process was well received, and the "Empire" collector is now offered for use on plantations of *Hevea*, or on *seringacs*. The process removes impurities and leaves a small percentage of the moisture.

The machine will be shown at the International Rubber Exhibition in London in June and July next, together with specimens of *Hevea* and *Castilloa* rubber coagulated with its use.

THE "FIXITE" LATEX CUP.

A NEW design in latex cups for use either on plantations or in gathering forest rubber is illustrated on this page. The firm responsible for it were the originators of glass latex cups, of which they are stated to have supplied several millions already to planters in the Far East. This cup is formed with a concave side, and thus can be fitted more closely to the tree than



THE "FIXITE" LATEX CUP

a cup of any other design yet produced; it may be attached at any height, or embedded in the ground at the root of the tree. It is molded with two rims at the top, between which a string or wire can be passed round the cup and the tree, thus securely holding it in place. One advantage of the new design is that its use obviates the driving of nails into the tree, and the consequent damage to the bark. The new cup is called the "Fixite." The standard size is 12 ounces. [C. J. Dams & Co., Limited, 121 Newgate street, E. C., London.]

FILTER PRESS PROCESS FOR RUBBER.

AN excellent sample of *Castilloa* rubber sent to THE INDIA RUBBER WORLD by The West Coast Rubber Co., from their "Punian" plantation, in Guatemala, is described as having been prepared by a new process. The method used, it is explained, is an adaptation of the filter press process frequently used for extracting the moisture from raw sugar or starch.

The first step in this process consists in washing the latex by putting it in water, of four or five times its volume, after which the material is strained through two or three sizes of wire netting. The rubber has now become coagulated to the extent that it can be placed in the filter press without running.

Alternate layers of the rubber thus prepared and of sand are put into the press, with sheets of wire netting and thin cotton cloth between the layers. After placing eight or ten layers of rubber in this way pressure is applied, and in the course of an hour or two the sheets are taken out in readiness for shipment.

The sand can be dried and used over again. The specimen referred to in this article is clean and dry, about $\frac{1}{8}$ inch in thickness, and has the appearance of crepe rubber, though bearing the marks of the wire netting.

The "Punian" estate is exporting forest rubber, while establishing plantations of *Castilloa*. The location is in the district of Escuintla, not far from San José, Guatemala. The West Coast Rubber Co. was incorporated in New York, in 1907. A view of their factory interior appeared in THE INDIA RUBBER WORLD July 1, 1908 (page 324).

FIREPROOF STORAGE FOR COTTON.

CONCRETE construction is regarded as most desirable for buildings designed for the storage of large quantities of material of an inflammable character, and a notable building of this description has recently been completed for the Massachusetts Cotton Mills, at Lowell, Massachusetts.

This building stands twelve stories high, and occupies a site 100x256 feet in the heart of the city, amid surroundings that made the storage of building material in any quantity impossible, and compelled the contractors to plan its delivery as required, in order to prevent at once, accumulation or delays.

The plans were prepared by the company's engineers, Lockwood, Greene & Co., Boston, and the Aberthaw Construction Co. of that city were the general contractors. The interior plan provided for mushroom columns and floors of re-inforced concrete slabs, thus doing away entirely with girders and saving much overhead space, the distance between floors being only eight feet. The columns, of latticed steel, encased in concrete, take up comparatively little room, and the outer walls are for the three lower stories, solid reinforced concrete, and above this, concrete panelled with brick. The grooving of the concrete on the lower floors, with the contrasting brick and concrete above, surmounted by a heavy moulded concrete cornice, give the building an attractiveness of appearance that detracts neither from its massive solidity nor from its practical adaptation for the purposes for which it is intended.

The fireproof quality of the structure is enhanced by the division of each floor into four separate compartments by reinforced concrete fire-walls extending the width of the building. All the windows, which are set in pairs between the concrete panels, are of sheet metal, with wired glass lights, the whole of extra heavy and fire resistant construction.

For convenience in handling the cotton, two elevators are provided in the rear, each so located alongside one of the end fire walls as to serve two compartments, the openings into which are protected by automatic fire doors, as are also the openings from one compartment into another. Each of the four sections is also provided with a series of hatchways to facilitate the lowering of material from floor to floor, all these hatchways have automatically closing fireproof doors, so that, in the event of an outbreak of fire, it would be confined to one section. The elevators are served by a concrete platform extending along the rear of the building. The only connection with any adjacent edifice is by means of a bridge of structural steel, covered with corrugated iron, which extends to another of the mill buildings across an intervening street.

To provide sufficient head room in the apartment known as the breaking and opening room on the ground floor at one end, the second story floor has been omitted, so that there are in all 47 compartments in the building, each separate and of such fire and waterproof construction that an outbreak of fire in the cotton stored in any one of them would not endanger the contents of any other.

The speed with which the building was erected is also a feature in connection with it. The piling was completed in July, 1910, and on January 1, 1911, the structure was ready to be turned over to the owners.

Some Rubber Interests in Europe.

ACCORDING to an official report on the industrial statistics of Finland for the year 1908, published recently, there is one rubber goods factory in that country, which is a grand duchy of Russia, in the northwestern part of the empire. It is that of the Suomen [Suomi is the Finnish name of the country] Gummi-Tehdas Osakeyhtio, in the town of Nokialla, near Tammerfors, with headquarters in Helsingfors, the principal seaport in the grand duchy. Helsingfors is located across the Gulf of Finland from St. Petersburg.

The number of work people employed during 1908 was 88, including 34 women and 12 boys and girls under eighteen years. The production embraced 137,000 pairs of rubber shoes and 42,000 kilograms of mechanical rubber goods. The materials used included 40,000 kilograms [= 88,000 pounds] of crude rubber, valued at 350,000 Finnish marks; 1,000 kilograms of domestic fabric, worth 52,000 marks; and 64,000 kilograms of foreign raw material, worth 19,000 marks. The factory employed 9 electric motors, with a total of 200 H. P.

Five rubber stamp factories in Finland (the two largest in Helsingfors) employed 17 workers, and had a total output valued at 60,200 marks. A new rubber stamp factory was established during the year at Wiborg, by the firm H. W. Huhtamo.

AUSTRIA-HUNGARY.

THE directors of Ungarisch Gummiwaren-Fabriks A.-G., of Budapest, has been empowered, by a special meeting of the shareholders, to increase the capital from 2,500,000 kroner [= \$507,500] to 3,500,000 kroner [= \$710,000]. The new issue embraces 5,000 shares of 200 kroner; the present shareholders have the option of subscribing for 2,500 shares, at the rate of 420 kroner, and entitled to rank for dividends from January 1, 1911.

The firm Oesterreichisch-Ungarische Michelin-Pneumatic G. m. b. H. has been registered in Vienna with a capital of 400,000 kronen [= \$81,200], to deal in "Michelin" tires, rims, and accessories. Leon Limborg is business manager.

CLOSING OF A FACTORY IN AUSTRIA.

THE plant of the Steinklammhofer Gummi-Werke G. m. b. H., at Steinklamm, near Vienna, after having been idle for some time, has been purchased by the Oesterrisch-Amerikanische Gummi-Fabrik Aktiengesellschaft. This company will utilize the machinery and tools in their various existing factories, and close the Steinklamm plant. The land and buildings are not included in the purchase. The business thus closed was registered, some two years ago, by G. W. Laughton & Co., Limited, of Manchester, England, manufacturers of mechanical rubbers and reclaimed rubbers, with a capital of 200,500 kronen. [See I R W February 1, 1909, page 171.]

GERMANY.

THE shareholders of Gummi-Werke "Elbe," Aktiengesellschaft, at Wittenberg near Piesteritz, at a special meeting on December 15, voted to increase the capital from 500,000 to 750,000 marks.

The capital of the Berliner Gummimantel-Fabrik G. m. b. H. is being increased from 30,000 marks to 100,000 marks [= \$23,841].

TWENTY-FIVE YEARS' BUSINESS JUBILEE.

ON January 12 Alfred Calmon, Hamburg, general director of the Asbest und Gummiwerke Alfred Calmon Aktiengesellschaft, of that city, celebrated the establishment, by him, on January 12, 1886, of that business. The firm was first engaged in the manufacture of asbestos packings and in trading in technical supplies, especially manufactures of rubber and asbestos. In 1890 the manufacture of packings was transferred to Hanover, where the asbestos factory of Otto Köhse & Son had been acquired, and on December 23, 1893, the concern was incorporated as a joint

stock company, with a capital of 540,000 marks. In 1896 the business was organized under the present title, with a capital of 1,500,000 marks, which has since been increased, as the growth of the business required, to the present 6,000,000 marks [= \$1,428,000].

SWEDEN.

FORTY tons of Russian rubber footwear arrived by steamer on November 12 at Stockholm, where duties amounting to upwards of 50,000 crowns [= \$13,400] were imposed. The shipment was made by the Russian-American India Rubber Co., Treügolnik, of St. Petersburg, to their own warehouse at Stockholm, opened since their former agents there went into liquidation recently. The business at Stockholm is conducted under the style Aktiebolaget Russian-American India-Rubber Co. "Treügolnik"—a corporation with a capital of 50,000 crowns. The Stockholm directors are Carl Emil Stenstrom and T. B. Blomqvist.

GREAT BRITAIN.

AT the annual meeting of the Liverpool Electrical Cable Co., Limited, on December 22, a final dividend of 15 per cent. was voted, making, with the 5 per cent. interim dividend paid in June, a total of 20 per cent. for the year.

There was to be a hearing in London on January 14 of a petition for confirming the reduction of the capital of the New Gutta-Percha Co., Limited, from £200,000 to £125,000. This company was organized in 1902, to manufacture a material known as Gentsch's artificial gutta-percha.

Mersey Reclaiming Co., Limited, registered November 28, 1910, with £25,000 [= \$121,662.50] capital—of which one-half is in preferred shares—to take over the rubber reclaiming business carried on at Daw Banks Works, Stockport, by the Palatine Trust, Limited.

Marshall Tyre Jacket Syndicate, Limited, registered December 13, 1910, with £100,000 [= 486,650] capital, to manufacture tire jackets, tires, and tire fabrics, and to adopt an agreement with the Marshall Tyre Fabric Co., Limited. Four of the seven directors are nominated by the latter company, including C. L. Marshall, who is managing director of the new company.

Dorn, Harding & Co., rubber brokers and merchants, 65 Fenchurch street, London, announce the admission as a partner in the firm of Charles Maxwell Kinneer, as from January 1, 1911.

The sole *concessionaire* for Ireland for Goodrich tires is J. Pullar Phibbs, Molesworth street, Dublin.

NORTH BRITISH AEROPLANE FABRICS.

THE North British Rubber Co., Limited (Edinburgh), have received a letter from Mr. C. Grahame-White informing them how highly satisfactory he found the aeroplane material made by them, which he used in the majority of his recent duration flights in the United States. He writes: "I was highly satisfied with the lightness and weather resisting qualities of the material, and hope to make mutually satisfactory arrangements with you for the supply of a large quantity for the aeroplanes which I am now designing, and which will shortly be put into construction."

A LARGE VULCANIZING PRESS.

AN order has been booked by David Bridge & Co., Limited, rubber engineers of Castleton, Manchester, for a special hydraulic vulcanizing press, 14 feet long x 54 inches wide, to have 12 rams—i. e., six pairs—and to work at high pressure. The press will have three platens—two daylights complete, with hydraulic charging and discharging appliances. This press is for the use of The Premier Reforming Co., Limited, of Walthamstow, in the manufacture of sheeting and other mechanical goods by their special process. The Messrs. Bridge have also installed three special heavy grinders electrically driven, for grinding up old rubbers, besides other special machinery.

Recent Patents Relating to Rubber.

UNITED STATES OF AMERICA.

ISSUED JANUARY 3, 1911.

- N**O. 980,226. Resilient wheel. H. R. Ellis, Salt Lake City, Utah.
 980,285. Hose connection. I. H. Spencer, assignor to The Spencer Turbine Cleaner Co.—both of Hartford, Conn.
 980,530. Rubber dam clamp. J. W. Ivory, Philadelphia, Pa.
 980,671. Pipe coupling packing. W. W. Price, Dayton, Ohio.
 980,677. Hose coupler. S. M. Rhoads, Philadelphia, Pa.
 980,895. Hose holder. J. Doherty, San Diego, Cal.

Trade Marks.

- 49,941. Eureka Fire Hose Manufacturing Co., Jersey City, N. J. The representation of a fabric hose. For woven linen fabric hose.
 51,911. Elwell Rubber Manufacturing Co., Boston. The words *Panther Tread*. For rubber heels.
 52,949. Charles A. Daniel, Philadelphia, Pa. The word *Ironsides*. For rubber belting.

ISSUED JANUARY 10, 1911.

- 980,930. Armor for tires. R. G. Dunwoody, Atlanta, Ga.
 980,954. Hose holder. H. J. M. Howard, Washington, D. C.
 981,047. Storage tire protector. B. S. Wescott, Elmira, N. Y.
 981,082. Nursing nipple. W. M. Decker, Buffalo, N. Y.
 981,106. Rubber sole shoe. H. O'Sullivan, Lowell, Mass.
 981,181. Demountable rim for wheels. J. W. Farnoff, assignor of one-half to W. J. Reiman—both of Buffalo, N. Y.
 981,182. Tire fastener. *Same*.
 981,208. Pneumatic tire. J. MacDonnell, Haverhill, Mass.
 981,213. Cushion tire. J. A. Mollitor, Chicago, Ill.
 981,265. Demountable rim for vehicle wheel tires. J. G. Hodgson and J. G. Hodgson, Jr., Maywood, Ill.
 981,266. Demountable vehicle rim for resilient tires. *Same*.
 981,524. Rubber fabric. W. T. Bonner, assignor to Empire Rubber Manufacturing Co.—both of Trenton, N. J.
 981,526. Automobile horn. G. Braf, A. Girardi, G. Occhinto, and S. Occhinto, New York.
 981,588. Shampoo shield. D. Nelson, Seattle, Wash.
 981,594. Demountable, resilient tire seating rim for motor car or other vehicle wheels. J. G. Hodgson and J. G. Hodgson, Jr., Maywood, Ill.

Trade Mark.

- 46,282. L. J. Mutt Co., Boston. The representation of two bull dogs pulling at fabric on which is marked the words *Bull Dog Brand*. For waterproofed textile fabrics.

ISSUED JANUARY 17, 1911.

- 981,640. Tire protector. R. M. Halliday, assignor of one-half to G. C. Halliday—both of Mount Gilead, Ohio.
 981,705. Hose connection. I. H. Spencer, assignor to The Spencer Turbine Cleaner Co.—both of Hartford, Conn.
 981,740. Demountable rim. A. R. Behrke, St. Paul, Minn.
 981,792. Means for securing pneumatic and other tires to the rims of wheels. E. Owen, Llandudno, England.
 981,866. Hose coupling. S. R. Lockhart, assignor of one-half to S. E. Milsted—both of Buna, Texas.
 981,981. Machine for forming automobile tire treads. W. H. Crook, Ansonia, Conn., assignor to the Birmingham Iron Foundry, Derby, Conn.
 982,045. Electric vulcanizer. W. C. Fish and A. M. Stanley, Lynn, Mass., assignors to General Electric Co.
 982,143. Vehicle wheel. G. B. Lambert, New York.

Trade Marks.

- 51,464. Thomas G. Plant Co., Boston. The words *Boston Leader*. For rubber boots and shoes.
 51,561. The Brown Shoe Co., St. Louis, Mo. The word *Mansion*. For rubber shoes.
 52,903. St. Mungo Manufacturing Co., Glasgow, Scotland. The word "*Captain*." For golf balls.
 52,904. St. Mungo Manufacturing Co., Glasgow, Scotland. The word "*Cadet*." For golf balls.

ISSUED JANUARY 24, 1911.

- 982,278. Rubber plate for shoes. J. P. Kline, Brooklyn, Mich.
 982,373. Process of separating rubber like gum from its vegetable source. W. A. Lawrence, assignor to Intercontinental Rubber Co.—all of New York.
 982,465. Tire sleeve. A. E. Berg, Oakland, Cal.
 982,573. Device for securing tires to wheel rims. A. L. Cadé, Paris, France.

Trade Mark.

- 46,326. New York Belting and Packing Co., Limited, New York. The word *Test*. For belting composed of rubber and fabric.

ISSUED JANUARY 31, 1911.

- 982,968. Cushion tire. L. Knapp, Denver, Colo., assignor of one-half to the Fawkes International Rubber Co., a corporation of South Dakota, and one-half to the Dayton Rubber Manufacturing Co., Dayton, Ohio.

- 983,177. Vehicle wheel. W. J. Straight, Chicago, Ill.
 983,231. Tire casing. H. R. Holbrook, Attleboro, Mass.

[NOTE.—Printed copies of specifications of United States patents may be obtained from THE INDIA RUBBER WORLD office at 10 cents each, postpaid.]

GREAT BRITAIN AND IRELAND.

PATENT SPECIFICATIONS PUBLISHED.

The number given is that assigned to the Patent at the filing of the application, which in the case of these listed below was in 1909.

*Denotes Patents for American Inventions.

- [ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, JANUARY 11, 1911.]
 21,482 (1909). Segmental elastic tire. A. G. and G. P. Merchant, London.
 21,503 (1909). Woven driving belts impregnated with balata or gutta-percha. T. Taylor and J. Taylor & Co., Waterfoot, near Manchester.
 21,537 (1909). Golf balls. W. M. Short, Beckenham, Kent.
 21,611 (1909). Rim for pneumatic tires. W. H. Fry, London.
 21,692 (1909). Pneumatic protector for shoes. T. Herbert, Glasgow.

- [ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, JANUARY 18, 1911.]
 *22,127 (1909). Pressure gage for tires. C. R. Twitchell, Los Angeles, California.

- 22,217 (1909). Mold for tires. C. M. Gautier, London.
 22,222 (1909). Regenerating rubber. W. van Oosterzee, Nord, France.
 22,272 (1909). Apparatus for automatically inflating tires. R. Barnfather, Croydon, Surrey.
 22,307 (1909). Protective band for pneumatic tires. B. B. Hill, London.

- [ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, JANUARY 25, 1911.]
 22,376 (1909). Colotomy appliances. C. A. Hoefftcke and C. A. Hoefftcke, Limited, London.
 22,543 (1909). Tire repairing device. C. Ogden, Salford, Lancs.
 22,557 (1909). Flower holder for automobiles with rubber collar. A. Teb-bitt, Paris, France.
 22,606 (1909). India-rubber solvent. V. Scholz, Hamburg, Germany.
 22,607 (1909). India-rubber solvent. V. Scholz, Hamburg, Germany.
 22,807 (1909). Pneumatic tire. W. G. Y. Jones, London.
 22,810 (1909). Protective non skid cover for rubber tires. J. C. Hudson, London.

THE FRENCH REPUBLIC.

PATENTS ISSUED (with Dates of Application).

- 417,544 (June 23, 1910). R. A. Moore. Anti skidding arrangement for automobiles.
 417,635 (June 29). E. Spiegel. Process and apparatus for the manufacture of leather tires for wheels.
 417,752 (June 6). J. Cairns. Tires for vehicle wheels.
 417,756 (June 4). A. Millet. Application of a rubber sole in the manufacture of leather footwear.
 417,768 (June 11). Société Badische Anilin & Soda Fabrik. Process for the production of substances having the properties of caoutchouc.
 417,811 (July 2). F. Foelsch. Process of making leather, etc., impermeable, especially for footwear.
 417,866 (July 5). A. Vandervoert. Elastic tire for vehicles.
 417,887 (September 13, 1909). C. Putois. Improvements in tires for vehicle wheels.
 417,888 (September 13). A. A. Duhardel. Elastic tire for the wheels of vehicles, mechanical and other.
 417,905 (July 6, 1910). M. C. Overman. Improvements in vehicle wheels and in elastic tires for them.
 417,982 (June 20). E. Depreux. Arrangement for stretching, in the course of manufacture, belts of cotton and caoutchouc, known as balata.
 417,939 (May 20). J. C. Barker. Improvements in pneumatic tires.
 418,000 (July 1). A. Van der Stichelen. Elastic tire for the wheels of vehicles.
 418,001 (July 5). A. J. Michelin. Demountable multiple wheel for pneumatic tires, for automobiles and other vehicles.
 418,087 (July 9). F. H. de Lostalot. Elastic tire for all vehicles.
 418,090. (July 9). J. Markus. Improvement in the manufacture of boot heels from manufactured rubber wastes.
 418,351 (September 25, 1909). L. A. Emery. Anti skidding protector, for pneumatic tires in general.
 418,384 (July 19, 1910). E. Vedovelli. Protector for pneumatic tires.
 418,417 (July 21). L. Eschenbach. Rubber soled footwear.
 418,556 (July 25). F. Allasise. Counter-envelope for pneumatic tires.
 418,652 (July 27). A. J. Wilson. Tire for vehicle wheels.
 418,544 (July 23). Société Farben fabriken, formerly Fried Bayer & Co. Process for the production of a substance resembling caoutchouc and of the articles made from it.

[NOTE.—Printed copies of specifications of French patents can be obtained from R. Robet, Ingenieur-Conseil, 16 avenue de Villier, Paris, at 50 cents each, postpaid.]

The Late Hawthorne Hill

MR. HAWTHORNE HILL, associate editor of THE INDIA RUBBER WORLD, died after a brief illness at his home in Brooklyn on the morning of February 2. A short reference to this sad event was included in our February issue which was just going to press. Mr. Hill's death came suddenly, from an attack of pneumonia which in his somewhat weakened physical condition he was unable to withstand. He only left his office desk one week before his death, and was considered to be seriously ill for only 48 hours.

Mr. Hill was born April 13, 1857, on a farm in Crittenden County, Kentucky, near Marion, the county seat. He did not enter school until about the age of twelve, but having been well grounded at home previous to this time he had before this age become an omnivorous reader of books and newspapers and had contributed articles to the local papers. As a boy he subscribed to many papers and magazines and made an effort to secure, for inspection, a copy of every periodical of which he heard. Much of his time as a youth was spent in reading and writing and this with his remarkably retentive memory and close insight into details equipped him even before he reached his majority with a wonderfully varied and accurate fund of information. To this a continuance of the same painstaking and studious habits added year by year until in his days of maturity he became a veritable encyclopedia of varied and servicable information.

Mr. Hill's first employment away from home was as a teacher in the public schools of his native county. After one term as a teacher he moved—being then about 21 years old—to Marysville, Kentucky, where he had secured employment upon the local paper. While serving in this capacity he acted as correspondent to various daily newspapers in Cincinnati, Ohio, Louisville, Kentucky, and other cities. His work soon attracted the attention of the metropolitan editors and in the spring of 1879 Mr. Henry Watterson, editor of the *Louisville Courier-Journal*, offered him the position of "Kentucky State News Editor." In this position Mr. Hill soon became one of the best known newspaper men in Kentucky.

After serving several years on the *Courier-Journal* he resigned his position to become city editor of the *Louisville Commercial*. He was soon advanced to managing editor of that paper and served in that capacity until he decided in 1887 to try his fortunes in New York. His first connection in the metropolis was with the *New York World*, where he served in various capacities until 1889, when, on account of an unsatisfactory condition of health, he decided to give up the strenuous

daily work and cast in his lot with trade journalism. He became associated with THE INDIA RUBBER WORLD at its inception. Mr. Hill remained with these same interests when later on they founded *Hardware* and also when *The Engineering Magazine* was established. When *Hardware* was sold Mr. Hill severed his connection with this firm to become editor of that paper. After acting in this capacity for about a year Mr. Hill again joined the editorial staff of THE INDIA RUBBER WORLD and with the exception of a period of about fourteen months in 1894-5, when a protracted period of illness compelled him to give up editorial work, he has been continuously identified with this paper. When the paper was purchased by Mr. Henry C. Pearson, in the spring of 1900, Mr. Hill became identified with it as associate editor, the position he occupied until his death.

In October, 1886, Mr. Hill married Miss Lillian Sawyer, of Frankfort, Kentucky, who survives him. He also leaves twin boys nineteen years old and a daughter of twelve. The interment was in Greenwood Cemetery.

More than twenty years of intimate association with Mr. Hill only served to intensify the impression of his unusual force and capacity. Possessed of a marvelous memory, coupled with a love of learning for learning's sake, his store of knowledge was encyclopædic. His long training in every department of daily newspaper work, together with a natural genius for it, gave to his writings not only an orderly, logical arrangement, but rare dignity and polish. Possessed of a passion for exactitude, no labor was too great if it re-

sulted in the verification or illumination of facts.

For breadth of view, sense of proportion and instant appreciation of news values, he ranked with the great editors of the day. Only a singular distaste for the trammels and disciplines incident to great publications kept him from a career in which his talents would have been broadly recognized.

As a conversationalist he held one's attention by his inexhaustible fund of information and wealth of illustration. Always courteous, generous to a fault, intensely patriotic, not in a local but a truly American sense, he held the esteem of all, while those who were able to penetrate the almost bashful reserve with which he enshrouded his inner self, found a soul of rare sweetness and strength.

What THE INDIA RUBBER WORLD owes to his intelligence and constant service, especially during its formative period, can hardly be expressed. How much he will be missed by his associates no words can depict.



The Late Hawthorne Hill.

[From a photograph taken fifteen years ago.]

FOREIGN MARKETS FOR RUBBER TIRES.

IN a recent issue of the *Daily Consular and Trade Reports* the subject "Markets for Rubber Tires" is discussed in reports of United States consuls from all parts of the world. The salient facts embodied in some of these reports, we reproduce, as likely to prove instructive to those of our readers who may be interested in the establishment of an export trade in their goods.

The consul-general at Moscow says, "The Russian market for solid tires is undoubtedly the largest in the world, though yet in its infancy. The demand for pneumatic tires is growing with the large increase in the automobile and bicycle trade." The report gives statistics as to the imports of automobiles and parts via European and Asiatic frontiers, particulars as to the leading rubber manufacturing companies in Russian and their output, the means adopted by other countries to secure a share of the trade and sources of tire supply, tells why Americans do not share in the trade, and how they may obtain part of it.

From Germany, the consul-general at Hamburg reports as to the duty on tires, the steps taken by manufacturers of other countries to secure a share in the trade, and offers suggestions as to how the market could be entered. The consul-general at Frankfort-on-Main quotes prices at which tires of German and French make are sold there, which he says, a foreign firm, introducing tires, would have to meet and depend on the superiority of their goods to win them a trade.

"An excellent field in this consular district for the sale of rubber goods," is reported by the consul at Carlsbad, Austria, who instances complaints as to the quality of the tires purchasable there, as affording a good basis for the introduction, at a reasonable figure, of good American tires. He gives some points as to the best plan for reaching the market in Austria-Hungary.

The consul-general at Marseilles, France, reports remarkable success in the sale of an American pneumatic tire in that market. American makes of solid tires also take the lead there, although they are being steadily displaced by the pneumatic. To get trade it would be necessary, in his opinion, to open a depot in Paris.

From Johannesburg, South Africa, the consul reports that "in point of population that city offers one of the best markets in the world for rubber tires, not only for automobiles, but for motorcycles and bicycles." He gives the number of motor cars licensed in the municipality, in the first months of 1910, at 700, not including the outlying towns and district of the "Reef," where the number of cars would raise the total to considerably over 1,000. He reports the tires sold mostly of European make, but a few of the garages stock American tires and occasional orders for them are given by general dealers. The monthly turnover in automobile tires in the district is placed by him at \$30,000 to \$35,000. In addition, there are 471 licensed motorcycles and 22,000 bicycles in use in Johannesburg alone, but being mostly of English make they are equipped with English tires. There is also a good demand for rubber tires for carriages. The American share of the business is at present insignificant, but could, in the consul's opinion, be increased by the establishment of a central depot, for the supply of the trade.

The consul-general at Santo Domingo, reports bicycles quite extensively used in the Dominican Republic, and many of the livery carriages, of a light surrey type—most of them imported from the United States—which in the absence of street cars are used for passenger conveyances, as having rubber tires. Although rubber tires do not wear well and soon need repairs, the facilities for doing this work are reported as poor.

From the above, it is easy to gather that there are plenty of opportunities in foreign markets, for the introduction of American rubber tires, if the manufacturers of the United States would expend, on their possibilities, a little of the energy they put forth to secure, against strenuous competition, a less important and much less profitable amount of business at home.

The following table of sales of automobiles and parts, made by United States manufacturers, to customers in foreign countries, for the past three years, compiled by the Department of Commerce and Labor, is calculated to interest rubber tire manufacturers. It shows, in the first place, the magnitude of the export business done in these goods, in the second its remarkable growth and it also indicates the countries in which there is likely to be a field for the introduction of meritorious products of this character:

Countries.	1908.	1909.	1910.
United Kingdom	\$1,728,704	\$2,059,210	\$2,755,592
France	560,449	846,136	753,204
Germany	158,979	181,087	331,754
Italy	248,519	224,068	377,750
Other Europe	217,172	335,675	764,463
Canada	1,115,540	2,437,042	5,021,043
Mexico	312,603	494,238	689,903
West Indies	198,078	337,414	412,588
South America	126,285	240,453	519,160
British Oceania	87,543	303,452	748,933
Other Asia and Oceanic	129,968	191,448	599,756
Other countries	64,754	136,394	216,150
Total	\$4,948,594	\$7,786,617	\$13,190,296

A NOTE OF WISDOM HAS BEEN STRUCK IN BUTTE, MONTANA. They have a city ordinance there—differing from most city ordinances, in that the police assume to enforce it—which requires the placing of rubber matting over coal-hole covers and other pieces of smooth iron in the sidewalk during the season of snow and slipperiness. A highly sensible and humane provision; for if there is any device calculated to effect a violent encounter between the sidewalk and the back of a man's head it is the polished coal-hole cover when disguised by a half inch of snow. Other cities in the snow belt might very properly follow the Butte lead, extending the law to cover sidewalks with glass settings, devised especially in the interest of the bone experts. Rubber matting on the slippery places of life would save many a man from coming down and help the matting market to move steadily up.

THE AGRICULTURAL DEPARTMENT of Java estimates the total area planted to caoutchouc on that island at about 36,770 hectares. Of this, 25,550 hectares are planted to *Hevea brasiliensis*, 6,430 to *Ficus elastica*, and 17,050 hectares to *Manihot glaziovii*, *Castilloa elastica*, etc.

WATERPROOF CLOTHING FOR THE FRENCH ARMY.

FOR some time past, the French military authorities have had in view the furnishing of rubber mantles to the officers. On the occasion of the last manœuvres in Picardy, experiments have again been made, with a new pattern, which, although no official notice of its acceptance has been made, is said to have proved very satisfactory. The new pattern suggested, is a very short mantle, fitting closely over the field uniform of the officers and made of a black, rubberized fabric. The closure in front is almost invisible, and is based on a press-button method, the collar rises high and is half stiff. This new pattern, which, as already stated, has a prospect of acceptance, is at once more elegant and cheaper than those hitherto suggested. German manufacturers of rubberized clothing fabrics, says the *Gummi-Zeitung*, may possibly find great interest in regard to the possibility of this general supply of officers' mantles and give it their full attention. Undoubtedly they would be in a position, in connection with this supply, to enter into profitable competition.

New Rubber Goods in the Market.

APCO PEDAL GRIP.

THE metal surfaces of the pedals, by means of which the movements of an automobile are controlled, are very likely, especially when they begin to wear, to develop a smoothness or slipperiness that makes the hold of the foot upon them insecure and is a familiar element of uncertainty and danger in automobile operation. The attempts made to obviate this trouble, by wrapping the metal pedal in rubber, rags, etc., or "serving" it with cord, afford the best evidence of its existence and recognition by drivers. Not only this, but the constant pressure on the unyielding metal surface and the tiresome efforts



APCO PEDAL GRIP.

to keep the foot in place, are not conducive to the motorist's comfort on long trips, especially on thoroughfares where constant control of the car is essential to safety. Apco Pedal Grips are offered as a means of avoiding these objectionable features. They are made of corrugated rubber, reinforced with a sturdy steel plate and provided with bolts by means of which they can be immediately and firmly secured in place. On these pedal grips the feet cannot slip, moreover, they take up jar and vibration to an extent that materially relieves the strain on the foot. Attractive in appearance, they look well on any car and are an inexpensive addition to its equipment. [American Pedal Co., No. 1733 Broadway, New York.]

NEW FEATURE ELECTRIC HOSE.

WITH a view of furnishing a customer with indisputable proof of the fact that when purchasing cut lengths of hose he is receiving what he paid for, enabling the salesman to cut any desired length without going to the trouble of measuring it off and at the same time furnishing the dealer with a ready means of ascertaining the quantity of any particular size of hose he may

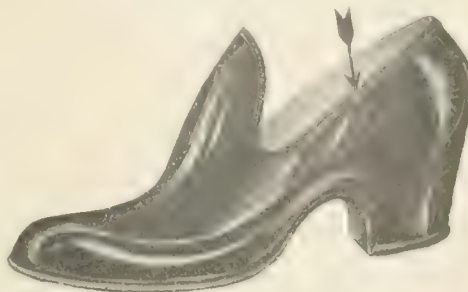


NEW FEATURE ELECTRIC HOSE.

have in stock, without having to measure it, the manufacturers of "Electric" and "Velvet" brands of seamless, circular, braided electric rubber hose, have adopted the plan of marking each foot of its length in the course of manufacture. The hose is made up in lengths of 500 feet or more, according to the nature of the demand and the buyer is thus enabled to obtain reasonable lengths in one piece, without joint or coupling. [Electric Hose and Rubber Company, Wilmington, Delaware.]

A KLINGTITE THAT CLINGS.

THE cut shown herewith illustrates the new Alice Lloyd Klingtite rubber, which is made both in the women's croquet and in the storm last. The essential feature of the Klingtite is similar to the essential feature of the Everstick shoe, viz., a cord running around the upper edge of the rubber, which, of course, greatly decreases the elasticity around the heel and



THE "KLINGTITE" RUBBER.

makes the rubber cling more tightly to the leather shoe, a feature which is useful where the clerk has not been particularly careful to see that the rubber is a good fit for the leather shoe. There is one difference between the Klingtite rubber and the Everstick in the fact that in the Klingtite the cord does not go entirely around the top of the rubber. Open space is left at the front in order to allow enough elasticity to make it possible to get the rubber on and off easily. [American Rubber Co., Boston.]

THE NEW FIRESTONE QUICK REMOVABLE SIDE WIRE TIRES.

A NEW tire and rim equipment that promises to revolutionize the present methods of changing truck tires, is being publicly offered for the first time by The Firestone Tire and Rubber Co., makers of the standard side wire tire. This equipment does away with layups for tire repairs or replacements, by enabling the driver to change tires anywhere in a few minutes, with no other tool than a wrench.

It keeps deliveries going on with but slight interruption and cuts off the dead expense of having the vehicle out of commission on account of tires.



SINGLE QUICK REMOVABLE TRUCK TIRE.

The accompanying illustrations show a single tire mounted on the wheel, and a sectional view of the rear wheel equipped



DUAL QUICK REMOVABLE TRUCK TIRE.

with dual tires, one of which has been removed. In order to change tires, the driver removes the nuts (6), of which there are fourteen around the wheel. This releases the clamping flange (5). He then slides off the tire, rim and all in one

of the tire. The clamping ring (4) is split and comes off along with the tire. A spare tire already applied to the rim is substituted by merely reversing the operation. One or two spare rims with tires already applied are kept at headquarters ready for use. Rims of equivalent size are interchangeable on all wheels, front and rear, single or dual. There is no risk of the tire not being firmly and properly applied in its rim, for the tire itself is applied by experts at any of the hundred-odd Firestone applying stations. The driver only changes the rim and does not tamper with the tire itself. This equipment enables the removal of any tires at will, to be rebuilt or repaired before they are too far gone. Such repairs to Firestone Side-Wire Tires frequently double their length of service. This equipment has been thoroughly tested and its efficiency proved in actual service before offering it to the public. One of the largest truck manufacturers has already adopted it as regular equipment. [Firestone Tire and Rubber Co., Akron.]

REPUBLIC SOLID CLINCHER TIRE.

THE Republic Rubber Co. is manufacturing a truck tire which possesses many of the most essential features conducive to economical truck tire service. It is known as the clincher flange type, and is made under patent issued to B. C. Swinehart, who has charge of their motor truck department. Cross wires are used to stiffen the base and to keep it from

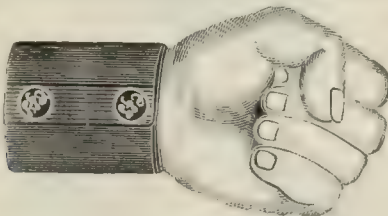


REPUBLIC SOLID CLINCHER TIRES.

pulling out from under the inturned clincher flanges. The flanges offset so as to protect the bolts from coming into contact with curbs, car rails, etc., and the clincher part of flange entirely protects the base of tire. The growing demand for quick detachable truck tires has rapidly pushed this tire to the front, until now it is one of the most popular on the market, as it can be replaced by a new one in less than one half-hour without the aid of any special tool or machinery. [Republic Rubber Co., Youngstown, Ohio.]

"SAXE" ALL ELASTIC WRISTLET.

THE comfort many people engaged in fatiguing occupations, such as typewriting and various mechanical pursuits, athletic sports, and the like, derive from a wristlet, and their indispensability in cases of weak or sprained wrists, has created a steady demand for appliances of this description. For the "Saxe" all-elastic wristlet, special advantages are claimed.

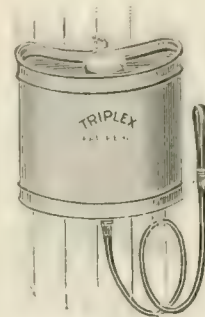


THE "SAXE" WRISTLET.

Made of rubber of the best quality, fully protected to avoid direct contact with the skin, it not only adapts itself, with unvarying uniformity to the conformation of the wrist, and follows all its movements, but constantly affords live and active support, without requiring to be fastened so tightly as to be uncomfortable. It is made in various sizes, is easily applied and of neat appearance. [Chesterman & Streeter, Inc., Philadelphia, Pennsylvania.]

THE TRIPLEX COMBINATION BAG AND IRRIGATOR.

A HOT water bag and an irrigator must be considered as indispensable articles in the hygienic outfit of every household and their value is enhanced where they are conveniently combined, as in the Triplex combination water or ice bag and irrigator, illustrated herewith. Owing to the material used in its manu-



TRIPLEX COMBINATION BAG AND IRRIGATOR

facture, it can be effectively sterilized, will withstand extremes of temperature and such oils or chemicals as are frequently prescribed for douching can be used in it without risk of injury. Its form enables it to be easily filled and as easily cleansed, and its manufacturers claim for it great durability and equal convenience for use as an ice cap or bag or hot water bottle. Its comfort is enhanced in either instance by the use with it of a conveniently removable flannel cover. [The Triplex Specialty Co., New York.]

A NOVEL AUTO SHIRT.

A NOVELTY among chauffeur's rubber auto shirts is found in one which fastens at the neck with double snaps, having a ribbon run through the collar to tie it closely. It is an extra full



NOVEL AUTO SHIRT.

garment, but not awkwardly so. Rubber hoods to match the same can be had, having a full cape to the hood. The whole outfit, which, as the accompanying illustration shows, is quite presentable in appearance, comes in colors of black, red and olive, and in a full assortment of sizes. [John Wanamaker, New York.]

The Editor's Book Table.

DER KAUSCHUK, UND SEINE PRUEFUNG. BY DR. L. W. HINRICHSEN and Dipl.-Ing. K. Memmler. Leipzig: S. Hirzel. 1910. [Paper. 8vo. Pp. 268. Price, 8 mark.]

THIS book, for its size, is one of the most comprehensive and complete works published in recent years on the subject of rubber, and especially the testing of rubber. The work, which is practically a digest of rubber literature, beginning with the first knowledge of rubber in 1493, is brought down to include matters published during March and April of 1910.

The book is well arranged, the sequence of the various subjects being natural and logical, as will be shown by a glance at the table of contents. It is divided into three distinct divisions, which are subdivided into sections. The first division contains a general description of rubber, under the following headings: Section A, History; B, Occurrence of Rubber; C, Properties of Latices; D, Constitution of the Rubber Hydrocarbon; E, Other Substances Occurring with the Rubber Hydrocarbon in Crude Rubber; F, Physical Properties of Crude Rubber; G, Chemical Properties of Crude Rubber; H, Theory of Vulcanization of Rubber; J, Technical Handling and Preparation of Rubber Materials; K, Properties of Vulcanized Rubber.

The second division is devoted to the chemical analysis of rubber, and is by Dr. Hinrichsen. The various subjects covered are as follows: A, Analysis of Crude Rubber; B, Analysis of Vulcanized Rubber; C, Life Tests of Finished or Vulcanized Rubber.

Division 3 covers the mechanical testing of rubber, and is by K. Memmler. Section A deals with strength tests of soft rubber and the methods of carrying out such tests; B, Results of Strength Tests on Soft Rubber According to the Older and Newer Methods of Testing.

This last division is especially complete, and the various methods of mechanical testing of rubber, which have been proposed from time to time, are very fully treated. The section is illustrated with numerous wood cuts and diagrams of apparatus used by various investigators in making their tests, as well as full descriptions of the methods of using these various pieces of apparatus.

This subject of the mechanical testing of rubber deserves a great deal more attention than has been given to it by most authors, and it is indeed gratifying to find that these authors treat the subject so fully. They give not only the results of their own experiments along this line, but also, in considerable detail, a description of the work of other authors and the results obtained by them. The various charts and tables illustrating these descriptions greatly enhance their value.

One other subject, which is treated at some length in various parts of the book, is the optical testing of rubber and rubber resins. This is also a line which will probably prove of great value in the future, and one which, in the opinion of the reviewer, is well worth the attention of experimenters. It might, indeed, furnish the subject of a graduating thesis for many students.

The entire work is well written, and the notes on the literature are admirably clear and full. The book deserves a place on the shelf of every rubber chemist.

THE CEYLON HANDBOOK AND DIRECTORY AND COMPENDIUM of Useful Information for 1910-11, to Which is Prefixed a Statistical Summary for the Colony and Review of the Planting Enterprise up to August, 1910. Compiled - - - under the direction of J. Ferguson, C.M.G. - - - Colombo: A. M. & J. Ferguson. 1910-11. [Cloth. Pp. lxiv + 1576. Price, £1 1s.]

THE Ceylon Handbook and Directory for the years 1910-11 is the same excellent compendium of business information on Ceylon that the previous editions have been. The book is some-

what increased in bulk, which is mainly due to the development of the Ceylon planting industry. Mr. Ferguson estimated that in the middle of 1910 the returns from the planting districts, after being carefully checked by the Colombo mercantile agents, showed that 188,000 acres of rubber were planted or being planted for the season. A good deal of this acreage is interplanted in tea. This interplanted area is estimated at 75,351 acres, while 21,169 acres of cacao are also intermixed with rubber. It is stated, however, that 188,000 acres may be safely taken to represent the land planted with rubber in Ceylon at the time this report was made. The book also devotes considerable attention to the other industries of Ceylon and gives especially full statistics on tea culture. The "Handbook" contains full particulars regarding all of the plantations of rubber and is an exceedingly valuable guide to all business men interested in this industry. This "Handbook" is one of the most complete that has been gotten out.

THE POCKET GUIDE TO THE WEST INDIES. BY ALGERNON E. ASPINALL. New and revised edition. London: Duckworth & Co. 1910. [Cloth. 16mo. Pp. 320. Price, 3s. 6d. net.]

This Pocket Guide to the West Indies is the second edition of a former publication by the same author. The original publication proved extremely popular and the demand for the book was so large that a second edition was made necessary. In the preface to the present edition it is claimed that much of the matter in the book has been rewritten and that an extra chapter on the Panama Canal has been added. The compiler of the work has taken the greatest care to secure the latest statistics and details with regard to all of the West Indian countries. The book contains many maps and charts and is a thorough compendium of the West Indies. It will prove extremely valuable to any traveler in that section of the globe.

INDISCHE CULTUUR ALMANAK (MET SUPPLEMENT) VOOR 1911. Samengesteld voor A. H. Berkhout en H. C. Prinsen Geerligs, 25e Jaargang. Amsterdam: J. H. de Bussy. 1910. [Cloth. 32mo. Pp. 385. Price, 3 florins.]

THE practical utility of this little work covers the entire year, including, as it does, a complete almanac, showing the various feasts, etc., fixed and movable, not only those observed by Christians, generally and the Roman Catholic Church particularly, but also those of the Israelite, Chinese and Japanese elements in the East Indian population. A memorandum diary, three days to the page, suggests the use of the book as a reminder for duties to be discharged, obligations to be met, etc., on different days, and there is also a fund of statistical and other information relating to the various crops cultivated in this section; weights and measures of the different nations, etc., etc. Professor Berkhout, one of the compilers, was formerly conservator of forests in the Netherlands Indies. The supplement referred to is a pamphlet of sixty-four pages, giving a list of works relating to agricultural, meteorological, entomological and other subjects. The almanac is neatly bound, in pocket form, with receptacle for memoranda, holder for lead pencil and rubber band.

MISSOURI BOTANICAL GARDEN, TWENTY-FIRST ANNUAL REPORT. St. Louis, Missouri, The Board of Trustees. [Cloth. 8vo. Pp. 195.]

PREFACED with a view of the library and laboratories of the Garden, and embellished with numerous well executed photogravures of botanical specimens; this handsomely printed publication embodies the report of the officers of the Board of Trustees of the Garden, and of the director, covering the year ending December, 1909, also the full text of papers on botanical and kindred subjects, prepared during the year and published by the trustees.

NEW TRADE PUBLICATIONS.

THE FIRESTONE TIRE AND RUBBER CO. (Akron, Ohio), has issued a little booklet entitled "How to Prevent Laying Up Your Trucks on Account of the Tires." This publication describes the detachable rims of the Firestone company and shows how the life of tires may be prolonged by having them rebuilt before they are too far gone. The publication is well illustrated and is particularly devoted to showing the advantages of the new quick removable self-wire tires. [3" x 6" 10 pages.]

THE B. F. GOODRICH CO. (Akron, Ohio). "Motorcycle Tires and Sundries" is the subject of the latest trade publication that reaches us from this company. It bears out their reputation as to typographical taste, while the contents will interest the dealer and the rider—especially the latter. The Goodrich roadster, the Goodrich Bailey tread and the Goodrich white heavy tread, tires on which the company's reputation is founded, are described and illustrated, the construction of each being shown sectionally and the advantages claimed for it set forth in terms that are perfectly comprehensible to the average motorcyclist; and which should furnish the dealer with the basis for some good motorcycle tire talk. The Goodrich motorcycle "tourist grip," butt end tube, Goodrich rubber V-belt, valves and valve stems, patches for punctures, Goodrich vulcanizing solution and Goodrich plastic cement, all well known to the trade as well as to cyclists, make up the portion of the catalogue devoted to sundries. Some useful hints on the care, removing, applying and repairing Goodrich motorcycle tires make up the balance of this attractive booklet. [5½" x 8½". 12 pages.]

THE DIAMOND RUBBER CO. (Akron, Ohio). Profusely illustrated and handsomely printed, a new catalogue of their rubber footwear, distributed by the above company is commendable alike for its comprehensiveness and for the consideration for detail displayed in the descriptive text. With this catalogue, and a knowledge of the requirements of his trade, the retailer can provide himself with a stock that will meet his every requirement. Diamond quality, to which special attention is directed, is a guarantee, alike to dealer and wearer that the goods will prove satisfactory. The catalogue is accompanied by a separate list of net prices. [5" x 7¼". 48 pages.]

THE LA CROSSE RUBBER MILLS CO. (La Crosse, Wisconsin), in fulfilment of their endeavor to place upon the market "the best-wearing lines of rubbers in their respective grades" publish a neatly printed catalogue of their rubber foot-wear, including everything the retail trade is likely to require in this line. The admirable illustrations and lucid descriptions, together with the reputation the company enjoys for owning the latest approved lasts and fitting all up to date shoes, should make this attractive booklet a useful guide to the dealer. A special 8 page list of tennis, recreation, yachting and gymnasium shoes, accompanies the above, the price list being likewise furnished in separate form. [4" x 7". 48 pages.]

THE GUTTA PERCHA AND RUBBER MANUFACTURING CO., OF TORONTO, LTD., publish, for the season 1910-1911, a catalogue and price list of their "Maltese Cross" tennis shoes, superseding all previous issues. Its twelve neatly printed and liberally illustrated 3½" x 6" pages, convey all the information in regard to these popular goods that the dealer needs in making his selections for a stock.

BEACON FALLS RUBBER SHOE CO., (Beacon Falls, Connecticut) fill 44 closely printed pages, 3½" x 6", with their catalogue and price list of rubber boots, shoes, etc., for 1911. The line is exceptionally complete, embracing everything made in the shape of rubber footwear for men, women and children, the company's trade-mark being accepted by dealers and wearers, as a satisfactory guarantee of quality.

W. D. ALLEN MANUFACTURING CO. (Chicago), manufacturers of brass goods, publish a catalogue and price list of their productions, 10 x 6 ins., covering, with index, 112 pages.

The rubber trade will be interested in the complete line of hose sprinklers, couplings, fixtures, nozzles, play-pipes, and other devices used in connection with hose, for garden, fire department and all other purposes, which this well-printed and profusely-illustrated publication displays.

CALENDARS FOR 1911.

LEBANON MILL CO. (Pawtucket, Rhode Island), issued for 1911 one of the handsomest calendars that has been received at this office. This calendar is a work of art, its main feature being a land scene, "Evening on the River." The photogravure is very handsome and the calendar makes an exceedingly attractive wall ornament.

The calendar of the Firestone Tire and Rubber Co. (Akron) for 1911 is illuminated with a large colored picture of two handsome girls in an automobile. The calendar is large and of wall size type and is well adapted to any business office. The Firestone quick detachable clincher tire is the prominent feature in the foreground of the picture.

INDIA-RUBBER GOODS IN COMMERCE.

EXPORTS FROM THE UNITED STATES.

OFFICIAL statement of the values of exports of manufactures of india-rubber and gutta-percha for the month of December, 1910, and for five calendar years:

MONTHS.	Belting, Packing and Hose.	Boots and Shoes.	All Other Rubber.	TOTAL.
December, 1910.....	\$138,333	\$172,121	\$487,680	\$798,134
January to November.	1,918,611	2,094,016	5,193,806	9,206,433
Total, 1910	\$2,056,944	\$2,266,137	\$5,681,486	\$10,004,567
Total, 1909	1,800,300	1,653,466	4,413,626	7,867,392
Total, 1908	1,256,490	1,329,170	3,580,685	6,166,345
Total, 1907	1,402,373	1,646,880	3,944,080	6,993,333
Total, 1906	1,162,751	1,213,196	3,282,659	5,658,606

The above heading "All Other Rubber," for the last six months, includes the following details relating to Tires:

MONTHS.	For Automobiles.	All Other.	TOTAL.
July	values \$146,080	\$56,096	\$202,176
August	151,468	71,486	222,954
September	133,735	39,457	173,192
October	103,788	33,469	137,257
November	160,214	37,962	198,176
December	144,645	47,325	191,970

Exports of rubber boots and shoes have been in quantity: 2,440,663 pairs in 1908; 3,150,294 pairs in 1909; 4,157,699 pairs in 1910.

Exports of reclaimed rubber: \$327,388 in 1908; \$487,675 in 1909; \$652,233 in 1910.

IMPORTS INTO THE UNITED STATES.

	1908.	1909.	1910.
India-rubber goods.....	\$1,509,629	\$1,390,684	\$971,764
Gutta-percha goods.....	97,593	71,857	79,111
Total	\$1,607,222	\$1,462,541	\$1,050,875

SOME EXPORTS FROM MANCHESTER TO THE UNITED STATES.

TABLE showing the values of declared exports of the following articles from the consular district of Manchester to the United States and the Philippine Islands during the years 1909 and 1910:

DETAILS.	1909.	1910.
India rubber sheets, pouches, etc.....	\$18,875.65	\$64,079.58
Balata and other belting	73,892.29	138,519.77
Waterproof garments and cloth	114,016.96	115,242.93
Brattice cloth	4,045.80	11,153.57
Card clothing	89,432.85	88,730.14
Laneleum	292,440.94	355,044.59

THE RUBBER TRADE IN CINCINNATI

BY A RESIDENT CORRESPONDENT.

THE Republic Rubber Co., is represented in this city by the Motor Car Supply Co. This company has just moved into the tire and automobile zone of the city by opening spacious offices at Eighth and Race streets. The new house is in charge of Charles R. Linson as manager.

The Auto Interlining Company of Cincinnati has been incorporated with a capital stock of \$25,000. The company will make interlining for automobile tires under a new process and will establish a large factory in this city. The intertubing is made under a new patent just secured. The new organization is made up of a number of prominent local business men. William Stacy is president and G. S. McDuff is secretary and treasurer.

Howard Goodall connected with the Cincinnati branch of the Diamond Rubber Co., has been transferred to the Louisville, Ky. depot, which has just recently been opened by the company in that city. C. A. Dunham, also of the Cincinnati branch has been appointed to look after the sales at the Louisville depot. Manager Simpson of the local branch has transferred C. R. Couden, who has been employed here as adjuster, to the Dayton, Ohio, depot.

Application has been made to the United States court here, for a stay of proceedings in the common pleas court of Springfield, Ohio, in the case of Mary S. Harshman against the Kansas City Tire and Rubber Co. (Kansas City, Missouri). The request was made on behalf of the trustee in the bankruptcy proceedings instituted against the Kansas City Tire and Rubber Co. Mrs. Harshman seeks to have set aside a conveyance of real estate located in Clark County, Ohio. The trustee in bankruptcy claims that this property belongs to the assets of the bankrupt. The court refused the application, however.

THE RUBBER TRADE AT AKRON.

BY A RESIDENT CORRESPONDENT.

THE last building erected by The B. F. Goodrich Co., a seven-story structure containing over two acres of floor space, will be devoted to the manufacture of solid rubber tires for vehicles and trucks. They are manufacturing a new model auto truck tire called the "Goodrich Quick Detachable." This tire requires no change of wheel measurements as the circumference of the tires is the same as those now in use, the diameter is two inches larger, making a longer wearing tire. The B. F. Goodrich Co. has undertaken the education of the public in the manufacture of rubber goods, by giving moving picture entertainments in various parts of the country. These are provided at the expense of the Goodrich Company, and represent the history of rubber from "Tree to Tire"; tapping the rubber trees in the tropical forests, the preparation of the rubber milk for shipment, the loading of the rubber hams at the large markets, the final loading for foreign ports, and the various steps in the manufacture of the same, up to placing the finished product on the market. The demonstration is complete and the places where these exhibitions are given are crowded. As many as 6,000 people have viewed at one time the giving of this entertainment.

The Société Française B. F. Goodrich Co. has been incorporated in France to take care of the business of The B. F. Goodrich Co. in France, Italy, England and Germany, and to take charge of the plant recently bought by that company at Colombes, near Paris. The B. F. Goodrich Co. at present are designing special machinery for that plant and expect to have it installed and the plant ready to go ahead with the manufacture of rubber

goods some time this summer. The company will put forth special effort in pneumatic and solid tires for motor trucks and carriages. This avoids heavy freight rates, and also the heavy duties now paid on imports of American tires to European countries.

The Republic Rubber Co. (Youngstown), has declared a stock dividend of 45 per cent. A new issue of \$1,000,000 of common stock has been authorized, and will be held in the treasury. An additional \$500,000 of preferred stock was authorized, and this is now being disposed of. The company has declared its regular quarterly dividend at the rate of 8 per cent.

The company is building a 5-story addition to its plant to extend the tire and other departments. The increase in common and preferred stock brings the total capital stock of the company up to \$4,000,000.

The Republic Rubber Co. of (Pittsburg), was incorporated for \$20,000, and will be located at Wood and Water streets, Pittsburg. E. E. Gallup is president, L. H. Irwin secretary, and Willard Fisher, treasurer. It is a selling agency and closely affiliated with the Republic Rubber Co. of Youngstown.

J. F. Singleton, of the Firestone Tire and Rubber Co., says that better service would be obtained on 90 per cent. of all motor truck tires if the following ten rules are observed:

1. Avoid overloading the vehicle. It places too much strain on the tires.
2. Do not overspeed. If the tires are persistently overtaxed they cannot give their full length of service.
3. Keep the brakes working with equal pressure on each wheel and the axles and wheels trued up.
4. Do not let oil or grease accumulate on the tires. It causes them to decay.
5. Always start the auto before turning the steering wheel.
6. Start and stop gradually. Avoid jerky motions.
7. Do not run your car along street car rails. It grinds off tire edges.
8. Cross car tracks at an angle when possible, and always choose the smoother pathway.
9. Merely resetting or repairing a side wire tire will often double its service. Always have this attended to promptly.
10. Always look well before you buy tires and select the longest wearing and easiest riding in the market.

The Firestone Tire and Rubber Co. has entered into a contract with E. A. Moross, Director of the Atlanta-Pablo Beach Speed Races, March 27-30, to guarantee and furnish three mile a minute tires. These tires have safely withstood a mile in 27.33 seconds over the Florida sands, and Mr. Firestone guarantees that his tires will not only stand three miles a minute but even four, if a car can be obtained to travel at that rate.

Mr. A. H. Marks, of the Diamond Rubber Co., is quoted as saying: "The working out of the perfect balance of a tire with respect to the correct size of air space in proportion to the width of seating area within the rim was an engineering problem for the tire manufacturer. The result is that no matter what the type of tire, the dimensions are quite definitely established."

"Not all makers work to precisely the same ratios, but in general the size of the tire is not determined by questions involving its appearance on the wheel, its stout or lean look or any mere seeming of great stability. The whole problem must be treated as one calling for the greatest scientific skill. The size of the tire cannot be changed without changing its whole general construction. That is to say, a large tire must have stronger, heavier walls, thicker, heavier tread and greater strength throughout than the tire for a smaller wheel or of smaller cross sectional measurements."

The Goodyear Tire and Rubber Co. have completed their new tire building, and dedicated the same by giving a dance for the benefit of the Goodyear Relief Association, which was organized January 26, 1909, and which has a present membership of over 500. A temporary floor of maple was laid, 65 feet wide by 400 feet long. The hall was well lighted by electricity, and the interior decorations were elaborate. Music was furnished by the historical Eighth Regiment Band of the Ohio National Guard, McKinley's Own, and by Kruse's Orchestra. There were 40 dances during the evening. The dance was enjoyed by more than

3000 people. At the hotel people amused themselves with cards. Refreshments were provided in wholesale quantities and served free of charge. This is the latest of the many enjoyable social events that the Goodyear plant has provided. The establishment at present covers a ground of area of 31 acres, has a power plant of 7,500 horsepower, an average number of 3,300 employes, and a capacity of more than 100,000 pounds of product per day. Its success is largely credited to the strenuous efforts of F. A. Seiberling, the present president of the company.

* * *

The Motz Clincher Tire and Rubber Co. have changed their name to the Motz Tire and Rubber Co.

* * *

The Universal Specialty Co. (Princeton, Indiana), recently purchased by the Miller Rubber Co., is being moved to Akron. The Universal Specialty Co. have been manufacturing atomizers and nebulizers. The Miller company expects to make this a separate department.

* * *

The United Rubber Co., located at Barberton, lately affiliated with the Portage Rubber Co., will soon build an addition to their Barberton reclaiming plant.

THE RUBBER TRADE IN SAN FRANCISCO.

BY A RESIDENT CORRESPONDENT.

THE usual satisfactory volume of business for this season, is reported by nearly all the rubber houses, and the prospect of the World's Fair in 1915, promises a general revival of commercial activity and all-around prosperity.

The B. F. Goodrich Co.'s new store on Market street is practically complete and makes a fine appearance both as to beauty and convenience. R. J. McNeilly, formerly with the Revere Rubber Co., has accepted an engagement with the Goodrich company.

The Goodrich retail store in Seattle is now doing business and is meeting with a fair measure of success in the automobile trade. It is located at 700 East Pike street, and is well equipped to handle this line. The firm is equipping a handsome general store on King street, off Occidental avenue, in the busiest part of the city, which will be opened for business early in March.

* * *

The Western Belting and Hose Co. have taken the agency for the Mt. Vernon Belting Co., whose goods were formerly handled by the Pacific Coast Rubber Co. The business and stock of the latter corporation has been taken over by the newly-organized Gorham-Revere Rubber Co., who are spending a large amount of money on their store on Fremont street, which is being enlarged and re-arranged to accommodate the stock of goods coming over from the Revere Rubber Co. and the Pacific Coast Rubber Co.

* * *

The Gutta Percha and Rubber Mfg. Co. has moved into its new quarters at 34 Fremont street.

The Phoenix Rubber Co. has sold the factory department on First street.

R. H. Pease, president of the Goodyear Rubber Co., and his son, have returned from Portland, where they report everything in good shape; they will leave for the east about the middle of March.

C. E. Matthewson, Pacific Coast manager of the Diamond Rubber Co., has returned from the convention of branch managers in the east. On his way home he stopped at Salt Lake City and established a new firm branch there. This Lake City and western Wyoming to the already extensive territory under his care.

THE RUBBER TRADE AT TRENTON.

BY A RESIDENT CORRESPONDENT.

WILLIAM H. SERVIS, of the Hamilton Rubber Manufacturing Co., has returned from Florida where he and his family recently enjoyed a short sojourn.

The Whitehead Brothers Rubber Co. have recently erected a modern and thoroughly fireproof warehouse.

The Essex Rubber Co. have added a complete line of sheet packing to their regular specialties.

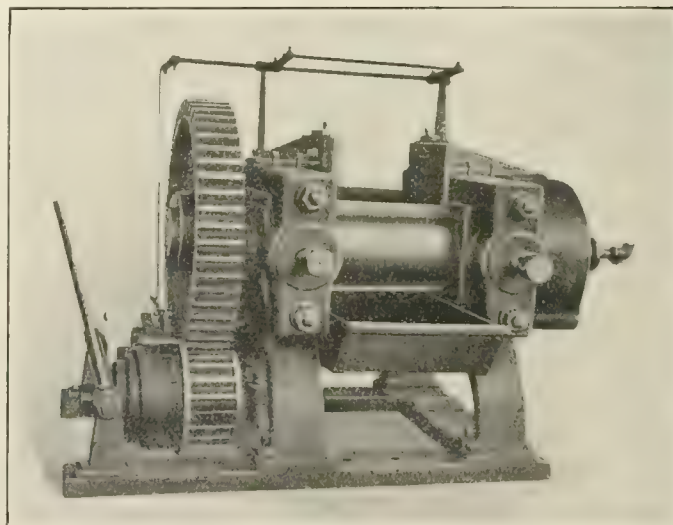
The Combination Rubber Manufacturing Co. (Bloomfield, New Jersey) contemplate the manufacture of automobile tires, preparations for which have been progressing several months.

Oliver Calahan, of this city, was fatally injured by a fall at the plant of Raymond Rubber Co. (Titusville, New Jersey) on February 20; Mr. Calahan, who has been connected with the Raymond Co. for eighteen years, sustained his injuries as a result of a 25-foot fall, causing a broken back, from which he died at St. Francis Hospital. He was well known in Trenton.

Mr. John Broughton, of the United and Globe Rubber Manufacturing Co., has returned from the middle West and reports materially improved conditions and a flattering outlook.

SINGLE-GEARED REFINER.

THE machine illustrated herewith, is a single-geared refiner, or hard rubber dust grinder, of which William R. Thropp & Sons Co. (Trenton, New Jersey) are the builders. The machine, as will be seen, is of very heavy type and is equipped with chilled iron rolls, the roll neck boxes being brass lined where they take their heavy strain. The front



SINGLE GEARED REFINER.
[Or dust grinder.]

roll is 14 ins., the back roll 18 ins. in diameter, 20 ins. long on the face. Two ways of lubricating the journals are provided, one by grease pockets, cast on the inside, the other by means of grease cups on top of housings, with pipes leading into boxes. The small gears, on the end of rolls, are lubricated from cast iron pans, located beneath them, partly filled with grease. In revolving, the teeth of the large gear dip into this, which lubricates them. A steel guard over the top of these gears, prevents anything getting into them and confines the grease to the pan. The machine is equipped with the makers' improved all-iron guides. Another feature of the machine is the improved stuffing boxes, of steam engine type, which are easily adjusted and afford ample room for packing. The steel mill pan, shown in the illustration, is another new feature.

News of the American Rubber Trade.

NEW YORK RUBBER CO.—ANNUAL.

At the annual stockholders' meeting of the New York Rubber Co. (New York), held January 31, the following trustees were re-elected for the ensuing year: John P. Rider, A. Montgomery, Jr., John Acken, Rufus A. Brown, William H. Lee, Edward S. Woodward and Henry Montgomery. The trustees held a meeting on February 8, at which John P. Rider, who had been for 48 years connected with the company, tendered his resignation as its president, on account of ill health. The resignation was accepted, with expressions of sincere regret and the retiring president was elected chairman of the board of trustees. The following are the officers elected for the current year:

President and Treasurer—John Acken.
Vice-President and Secretary—Henry Montgomery.
Second Vice-President—Henry F. Hering.

CHICAGO RUBBER CLOTHING CO.—ANNUAL.

The annual meeting of the stockholders of the Chicago Rubber Clothing Co. (Racine, Wisconsin), was held at the company's office, on January 28. Reports showing a satisfactory business during 1910 and prospects of an increase during the current year, were presented and the board of directors of last year re-elected. The board re-elected the officers, as follows:

President—Charles H. Lee.
Treasurer—E. V. Laughton.
Secretary and General Manager—George G. Bryant.

CENTRAL CITY RUBBER CO.—ANNUAL.

The annual meeting of stockholders of the Central City Rubber Co. (Syracuse, New York), was held in that city on January 28. A satisfactory account of the year's business was presented, enabling the company, although it was the first year of its business, to declare a dividend of 7 per cent. on the preferred shares. It was voted to increase the capital by the sale of \$10,000 additional shares, to meet the demands entailed by the growth of the business. The directors elected for the ensuing year were David A. Gould, John R. Graham, A. Park Sager, Daniel A. Pierce and Herbert F. Smith. The board elected officers as follows:

President—David A. Gould.
Vice-President—A. Park Sager.
Secretary and Treasurer—John R. Graham.

THE CANTON RUBBER CO.

At the annual meeting of stockholders of the Canton Rubber Co. (Canton, Ohio) to be held March 3 a proposition to increase the company's capital stock from \$35,000 to \$200,000 will be presented for ratification. The rapid expansion of the company's business makes increased manufacturing accommodations imperative and a site has been purchased on Marion street, on which a four-story brick and concrete building, 45 x 250 feet, will be erected, in which, with the best machinery, it will be possible to employ 200 hands in place of the present force of 38.

The business was established in 1898 by R. D. Bradley, its present president, in partnership with Edwin Davis, now the company's vice-president, and starting with a dwelling house, the present factory gradually developed. In 1901 the company was incorporated with a capital of \$35,000 under its present title as manufacturers of fine druggists sundries, specialties and pure Pará seamless rubber goods. Since that period their business at home and abroad has grown wonderfully, the increase for last year over the preceding period having been upwards of 50 per cent.

Work on the new factory, for which plans are now nearly completed, will be commenced in April so that the building will be finished by October and available for the fall trade. It will have spur tracks to the Pennsylvania, Baltimore and Ohio railroads and every facility for handling a greatly increased business.

THE YEAR'S BUSINESS OF THE MACKAY COMPANIES.

The report of the year's business of the Mackay Companies, for the twelve months ending February 1, presented at the annual meeting of the trustees, held on February 16, shows total receipts of \$4,125,907, an increase of \$317,128, as compared with the receipts for the preceding year. The dividends paid on the Mackay Companies, which consist of a majority stock interest in 102 prosperous land and marine telegraph and telephone corporations in the United States, Canada and Europe, including the entire stock of the Commercial Cable Co. and the Postal Telegraph system, was \$4,069,020, compared with a distribution of \$3,758,667 in 1910. The operating expenses, etc., amounted to \$37,194 for 1911, compared with \$32,284 for 1910, the increase being due to higher prices paid for labor and to the construction of new land and cable lines. The trustees reported the sale, in February last, of the company's entire holdings in the American Telephone and Telegraph Co., commonly known as the Bell Telephone Co. The expediency of the sale was dictated by changes in the relations between the company in question and the Western Union Telegraph Co., by which the advantages derived by the Mackay Co. from ownership of telephone phone stock, were neutralized. About \$12,000,000 was realized from the sale, which was invested intact, at good interest, and is reserved as a contingency fund. In addition the company carried forward a balance of \$19,093 to next year's account. An interesting and gratifying feature of the year's business was the increasing extent to which the company's employes are investing their savings in its securities, their holdings now amounting to upwards of two million dollars.

AN ERROR OF OMISSION.

In a notice of a banquet given to the employes of the Mulconroy Co., Inc. (Philadelphia), in the February number of THE INDIA RUBBER WORLD, we referred to the company as "dealers in rubber goods." This was an error of omission which we desire to correct; the company are not only dealers in but manufacturers of rubber goods on quite an extensive scale, their productions including belting, packing, hose, mechanical rubber goods for all purposes, and the well-known "Seven League" rubber boots, their factory being located at No. 816 Appletree street, where they have a capacity for manufacturing 2,500 feet of hose and 100 pairs of boots daily. The "Seven League" rubber boot is a patented article, having rubber uppers on a leather sole, the feature of the patent being the inseparable and waterproof connection of the waterproof leather and rubber sole with the equally durable and waterproof rubber and canvas upper.

BOSTON RUBBER HOSE AND RUBBER CO. DIVIDEND.

The directors of the Boston Woven Hose and Rubber Co. (Boston), have declared a quarterly dividend of two dollars and a half (\$2.50) per share on the common stock, payable March 15, 1911, to stockholders of record, March 4, 1911.

A MILLION DOLLAR RUBBER COMPANY IN MAINE.

The certificate of organization of the Asia Rubber Co. of America, provides that the purpose of said company is to manufacture and trade in india-rubber, its ingredients and by-products, and such gums, minerals, etc., as may be needed for incorporation with it in its manufacture; the acquisition of such property, machinery, raw material, etc., as may be required in carrying on the business, and the purchase, leasing, holding, renting, etc., of such processes, mechanical devices, patents, inventions, improvements, etc., as may be needed in connection therewith, and to issue, hold or sell stocks, bonds, or other obligations that may be needed in acquiring possession of any corporation engaged in similar businesses, either domestic or foreign, to carry on the business of transporting freight or passengers, on

any waters whereon its vessels may navigate, etc. The company is to have its headquarters at Augusta, Me., and the amount of the capital stock is stated at one million dollars in 50,000 shares of twenty dollars per share.

NEW INCORPORATIONS.

AMERICAN Tire Co., December 19, 1910, under the laws of Missouri; capital \$10,000. Incorporators: N. W. McLeod, W. E. Grayson, and M. A. Dees—all of St. Louis, Missouri. The company has been formed to manufacture and market an inner casing.

The Atlantic Punctureless Tire Co., January 18, 1911, under the laws of New Jersey; authorized capital \$10,000. Incorporators: August Kleinatland, George Herrmann, Charles Stansbury, and Peter L. Alberse—all of Paterson, New Jersey.

Boston Rubber Reclaiming Co., January 9, 1911, under the laws of Massachusetts; authorized capital \$60,000. Incorporators: Benjamin W. Chase, Somerville; Albion B. Clapp, Wellesley Hills, Massachusetts, and S. M. Macdonald, Medford, Massachusetts.

Independent Rubber Co., January 31, 1911, under the laws of Ohio; authorized capital \$10,000. Incorporators: A. G. Rogers, A. J. Rowley, Grace A. Sirdefield, Loyd R. Read, and R. H. Nesbitt. Principal office of the company is located at Akron, Ohio.

Miegel Rubber Manufacturing Co., February 6, 1911, under the laws of Connecticut authorized capital \$25,000. Incorporators: Charles William Miegel, William T. DeWaters, and Charles L. Thompson—all of Stamford, Connecticut.

Peerless Tire and Manufacturing Co., January 9, 1911, under the laws of Illinois; capital \$25,000. Incorporators: Frederick Dickinson, Irving J. Solomon, and Edwin D. Lawlor. Principal office of the company is located at No. 1610 Michigan avenue, Chicago, Illinois.

United States Tire Co., February 1, 1911, under the laws of New York; authorized capital \$500,000. Incorporators: Elisha S. Williams, Larchmont, New York; Homer E. Sawyer, No. 56 West Thirty-third street, New York City; Joseph M. Gilbert, Mt. Vernon, New York.

Boyd Rubber Co., January 13, 1911, under the laws of Maine; capital \$100,000. Directors: John H. Pierce, president; Frederick J. Laughlin, treasurer; Ernest M. White, Sidney St. F. Thaxter, and Frederick L. Jerris—all of Portland, Maine. David W. Snow, of Portland, is clerk of the company.

Brazil Rubber, Timber and Land Co., December 24, 1910, under the laws of Delaware; authorized capital \$4,000,000. Incorporators: George McEwen Malcolm, Charles Cable—both of No. 17 Cedar street, New York; Hayward Augustus Harvey, Orange, New Jersey, and James M. Satterfield, Dover, Delaware.

Cataract Rubber Co., January 4, 1911, under the laws of New York; capital \$500,000. Incorporators: Herbert J. Jaynes, Alden; Harold V. Cook, Hamburg; and J. Neil Mahoney, Buffalo—all of New York.

DOMINION RUBBER CO.

THE DOMINION RUBBER CO., LIMITED (St. Jerome, P. Q., Canada), is now operating the old plant of the Boston Rubber Shoe Co. in that city. This plant has been lying idle for five years and is now being used for the manufacture of tennis footwear. The Canadian Consolidated Rubber Co., Limited (Montreal), is the selling agent for the Dominion company.

HENTSCHEL-KEMTER TIRE CO.

ACCORDING to information sent to THE INDIA RUBBER WORLD by the Hentschel-Kemter Tire Co. (Union Hill, New Jersey), the incorporation of which, under the laws of New Jersey, was mentioned in our February 1 issue, the purposes of the corporation are for "manufacturing and dealing in a new automobile tire, which is so constructed as to make it punctureproof. The

tire cannot blow out, explode or flatten and will wear twice as long as an ordinary tire. The prices will be practically the same as the standard up-to-date tires of the present day. The shoe is specially constructed and the studs are made to give the longest possible wear. It is a cushion shoe and the metal studs are of an entirely new pattern from those now used." It is claimed that this tire will do away with such accessories as inner tubes, valves, air pumps, tire sleeves, and so on.

UNITED STATES RUBBER CO.'S ISSUES.

TRANSACTIONS on the New York Stock Exchange for four weeks ending February 18:

COMMON STOCK, \$25,000,000.

[The treasury of a subsidiary company holds \$1,334,000.]

Last Dividend, April 30, 1900—1%.

Week January 28	Sales 6,100 shares	High 39¾	Low 37½
Week February 4	Sales 11,070 shares	High 42¾	Low 39
Week February 11	Sales 4,700 shares	High 41¾	Low 40¾
Week February 18	Sales 17,600 shares	High 44¾	Low 41½

For the year—High, 44¾, Feb. 17; Low, 36, Jan. 6.
Last year—High, 52½; Low, 27.

FIRST PREFERRED STOCK, \$39,824,400.

Last Dividend, January 31, 1911—2%.

Week January 28	Sales 925 shares	High 110¾	Low 109¾
Week February 4	Sales 2,660 shares	High 112	Low 110
Week February 11	Sales 900 shares	High 111¾	Low 111½
Week February 18	Sales 1,535 shares	High 113	Low 111½

For the year—High, 113, Feb. 18; Low, 109½, Jan. 18.
Last year—High, 116½; Low, 99.

SECOND PREFERRED STOCK, \$9,965,000.

Last Dividend, January 31, 1911—1½%.

Week January 28	Sales 300 shares	High 73½	Low 72½
Week February 4	Sales 1,820 shares	High 75	Low 72½
Week February 11	Sales 500 shares	High 75	Low 73¾
Week February 18	Sales 835 shares	High 76½	Low 75

For the year—High, 76½, Feb. 17; Low, 72½, Jan. 31.
Last year—High, 84, Low, 59½.

SIX PER CENT. TRUST GOLD BONDS, \$19,000,000.

Outstanding of the 1908 issue of \$20,000,000.

Week January 28	Sales 16 bonds	High 103¾	Low 103½
Week February 4	Sales 40 bonds	High 103¾	Low 103½
Week February 11	Sales 55 bonds	High 104	Low 103½
Week February 18	Sales 39 bonds	High 103¾	Low 103½

For the year—High, 104, Feb. 11; Low, 103, Jan. 7.
Last year—High, 104½; Low, 101¼.

E. J. McCORMICK RUBBER CO.

THE IMPERIAL RUBBER WORKS (New York) announces under date of January 11, the change of its firm name to E. J. McCormick Rubber Co. The management of the concern, also the address, 26 West Broadway, New York, remain the same. The circular letter, through which the announcement of the change is made, is accompanied by a list of reduced prices which went into effect on February 1.

TRADE NEWS NOTES.

Instead of putting anti-skids on both rear wheels as is the universal custom among automobilists, Michelin advises one on the rear wheel, and the other on the right forward wheel. As a rule Michelin knows.

The New Jersey Car Spring and Rubber Co., of Jersey City, has changed the location of its New York offices from No. 1841 Broadway to the Hudson Terminal Building, 30 Church street. The company has also opened a Boston office in charge of Mr. C. A. Clark.

Mr. W. A. Williams, assistant general superintendent and chief chemist of The North British Rubber Co., Limited, of Edinburgh, was in the States during the past month on several matters of business.

CONVERSE RUBBER SHOE Co. (Malden, Massachusetts) have taken the first steps toward the replacement of the building recently destroyed by fire that caused them a loss of \$250,000. A gang of workmen are clearing away the debris preparatory to starting work on the new structure, which will be 60 x 120 ft., of brick and reinforced concrete, that will form an extension to the present building.

GROWTH OF THE RUBBER HEEL BUSINESS.

HUMPHREY O'SULLIVAN advises THE INDIA RUBBER WORLD that he is not connected in any official way with The O'Sullivan Rubber Co., recently incorporated in Delaware, to take over the business in rubber heels which he built up under the same name at Lowell, Massachusetts. [See I. R. W., January 1, page 138.] Mr. O'Sullivan retains his connection as treasurer with The Merrimack Clothing Co., at Lowell. The Delaware company has a capitalization of \$1,600,000, of which \$600,000 is preferred and \$1,000,000 common stock. The preferred is to pay 7 per cent. per annum, and is to be retired from the surplus earnings so that the common stock in time is expected to become very valuable.

GUGGENHEIM'S (?) RUBBER TRUST.

It is not easy to see the utility of such information as appears in this news item from the Lewiston (Maine) *News*, of January 14. To everybody in the rubber trade it will appear a very surprising, original, and exclusive piece of news; as for people outside the trade, all rubber news seems to look alike to them.

GUGGENHEIM WINS THE RUBBER.

Guggenheim's rubber trust, reinforced by the Aldrich schedules, has made \$8,500,000 profit the last year, and has built a new plant in Aldrich's city of Providence out of the odd change of \$500,000, passing over to millionaire promoters a trifling balance of eight millions. Financing Aldrich's enterprises is easy. Aldrich does not need Morgan's help. Aldrich improvidently promotes industries in his own city, at the expense of the consumer. The rubber trust increased its business in 1910 over 1909 about 20 per cent! Meantime gum shoes cost more under the Aldrich tariff.

If the *News* really wants to instruct the public, why doesn't it print the name and location of any rubber company that makes profits of \$8,500,000 in a year? Also, the connection of any of the persons mentioned in its article with the said rubber company. Furthermore, what does the tariff—or the musical glasses, or the Tower of Babel—have to do with the matter? Specific answers to these questions might afford THE INDIA RUBBER WORLD information of importance which is wholly unknown in the rubber trade.

AN UP-TO-DATE RUBBER MILL.

THE accompanying cut shows the new factory of Parker-Stearns & Co., located at Sheffield and Georgia avenues, Brooklyn, New York. The building is a substantial six-story struc-



PARKER-STEARN'S & CO.'S NEW FACTORY.

ture of fireproof construction, and fitted throughout with an automatic sprinkling system. The practical departments are equipped with up-to-date machinery and appliances best adapted to the successful production of a complete line of drug and stationers' sundries, surgical and hospital appliances, automobile accessories and a variety of rubber specialties. A recent adjunct of the shipping department is the addition of several motor trucks. The company does a large domestic and foreign business.

IT REALLY DOES NOT SEEM as if our rubber manufacturers were getting all the South American business they are entitled to. Take Brazil for instance. One-half of the crude rubber exported from Brazilian ports comes to the United States and it would appear logical and reciprocal that half of the imports of manufactured rubber going into that country should be American

goods. But the fact is that less than one-seventh of the rubber goods imported into Brazil are American. Practically our only rubber exports to that country are druggists' sundries. American tires, hose and footwear are almost unknown in Brazil. To be sure their gross rubber imports are not large; in fact, not much over a half million a year; still of that amount we get only about \$75,000. We certainly ought to do much better than this.

BUSINESS FAILURES IN THE UNITED STATES.

An indication of interest in relation to business conditions in the United States is derived from the yearly statistics of business failures compiled by the New York journal, *Bradstreet's*. Fewer failures than in 1909 or 1908, but more than in 1907 or 1906, with larger liabilities than in 1909, but smaller than in 1908 or 1907, were the features of the 1910 report to *Bradstreet's*. More failures occurred in the northwest, while the south showed the largest decrease. More than one-sixth of all liabilities were due to banking suspensions. A considerable part of the increase in banking liabilities over 1909 is explained by the final shutting down of banks which suspended in 1907, but resumed later. Owing to the larger number of those in business and the lessened number of failures, the commercial death rate was lower in 1910 than in all but two of the past 29 years.

Bank clearings for 1910 aggregated \$161,786,328,803, a loss of 1.5 per cent. from 1909, when the figures were of record volume. Declining tendencies in the final six months of the year offset gains made theretofore.

TRADE NEWS NOTES.

William H. Scheel (No. 159 Maiden lane, New York), is sending out circulars descriptive of the merits of his imported English terra alba, German black fillers, French oxide of zinc, and Indian red and Italian talc. He stands ready to fill all orders for this class of goods with the best possible materials.

The B. F. Goodrich Co. (Akron), is now sending out its annual souvenir picture, a portrait by Carroll Beckwith. The Goodrich girl of this year is named Beatrix, and the picture is that of a very handsome woman, and is accompanied by a personal letter signed with that name. This is the twenty-third annual souvenir issued by the company, the first having appeared in 1889.

The Amsterdam Rubber Co. (New York), whose headquarters have been at No. 107 Duane street for the last four years, expects to remove on May 1 to a larger store at No. 142 Duane street.

The jobbers handling the brands of rubber footwear sold by the United States Rubber Co., are receiving framed pictures of the various mills where their respective brands are made. These pictures are about 20 x 34 ins., and give very faithful representations of the different mills. They are printed on tinted paper, and framed in Flemish oak, and the result is not only a good picture of the mills represented, but something that is distinctly ornamental to any wall.

While the export business in rubber footwear from this country has never assumed the proportions that it might properly have been expected to reach, still it evidently covers a very considerable territory, as will be seen from the fact that the Candee Rubber Co. alone sends out advertising in seven different languages, viz.: French, German, Armenian, Turkish, Greek, Arabic and Hebrew.

The net value of the rubber footwear produced in this country last year is placed by those familiar with the subject at \$45,000,000. The total value of the rubber footwear in 1860 was \$795,000. The industry was then eighteen years old and it had not yet reached the million mark, while in the last fifty years it has increased at an average of nearly a million a year.

AMERICAN MANUFACTURERS AND THE RUBBER EXHIBITION.

AT present, quality rather than quantity should be the watchword in international exhibitions, if visitors are to find them informing. This applies to rubber exhibitions just as emphatically as to exhibits of any other name or nature. It would be very easy to fill the whole of a great exhibition hall with miles of rubber belting, tons of tires, and carloads of shoes, but to what end? The present status of the American industry could be far better illustrated by an intelligent grouping of well-chosen samples. Such a composite exhibit, reflecting the state of the art, were it complete would be a wonderful advertisement for American manufacturers.

There is no likelihood that such an exhibit will be made. There will be, however, certain rubber manufacturers from the Americas, who will show a varied line of goods typically American. The basic reason that more will not be present as exhibitors, is because most are still satisfied to supply only the home market and do not seek export trade. General attention, however, is being directed more and more toward the great markets of the world, and within a decade,

such a rubber exhibition as that which begins in London in June of this year, will of necessity contain scores instead of half a dozen of notable American exhibits.

TENTH EXHIBITION OF AUTOMOBILES, ETC.

JUDGING from the voluminous and profusely illustrated catalogue, published under the auspices of the *Chambre Syndicale de L'Automobile et du Cycle de Belgique*, the Tenth Exhibition of the Automobile of the Bicycle of Sports and Aero-nautics, held at the Palais des Cinquantenaire, Brussels, from January 14 to 25, was a pretentious and well patronized affair. The catalogue is embellished with portraits of the King of the Belgians, the mayor of the city of Brussels, under whose joint patronage the exposition was held, as well as with portraits of men prominent in the automobile and bicycle trades, and in the field of aviation in Belgium, and also contains lists of the members of the *Chambre Syndicale*, of the exhibitors and the articles exhibited, the latter part of the programme being notably well arranged and showing an exceedingly interesting and comprehensive line of exhibits in the shape of cars, bicycles and accessories of every description.

Review of the Crude Rubber Market.

SINCE our last report there has been a considerable advance in prices, which have steadily risen during the past month.

Practically all grades have been affected, and are in buoyant tendency. At the close of the month, Upriver fine new was quoted \$1.64@1.65, as against \$1.24@1.25 at its opening. The quotation on Plantation smoked sheet on February 28, was \$1.83 @ \$1.84, an advance from the February first figure of \$1.40@1.41. This increase is ascribed to manipulation rather than to radically heavier demand, though there is no doubt of a slightly increased call, usually incidental to a rising market. As a matter of fact, the indisposition of operators to enter the market for other than "immediate necessity" reasons, during the past several months has naturally exerted a more or less depressing effect on prices, and the present advance consequently affords a pronounced contrast. The current trend is higher, and it is not improbable that prices will advance within the immediate future.

NEW YORK QUOTATIONS.

FOLLOWING are the quotations at New York for Pará grades, one year ago, one month ago, and February 28—the current date:

PARÁ.	Mar. 1, '10.	Feb. 1, '11.	Feb. 28.
Islands, fine, new.....	199@200	112@113	152@153
Islands, fine, old.....	201@202	none here	none here
Upriver, fine, new.....	212@213	124@125	164@165
Upriver, fine, old.....	214@215	128@129	166@167
Islands, coarse, new.....	89@ 90	65@ 66	89@ 90
Islands, coarse, new.....	128@129	96@ 97	117@118
Islands, coarse, old.....	none here	none here	none here
Upriver, coarse, new.....	128@129	96@ 97	117@118
Upriver, coarse, old.....	129@130	100@101	119@120
Cametá.....	97@ 98	69@ 79	93@ 94
Caucho (Peruvian), ball.....	130@131	94@ 95	117@118
Caucho (Peruvian), sheet....	101@102	none here	none here

PLANTATION PARÁ.

Fine smoked sheet.....	230@231	140@141	183@184
Fine pale crepe.....	—@—	124@125	168@170
Fine sheets and biscuits.....	—@—	118@119	158@159

CENTRALS.

Esmeralda, sausage.....	117@118	90@ 91	107@108
Guayaquil, strip.....	none here	none here	none here
Nicaragua, scrap.....	116@117	88@ 89	105@106
Panama.....	none here	none here	none here
Mexican, scrap.....	115@116	86@ 87	104@105
Mexican, slab.....	none here	50@ 51	65@ 66
Mangabeira, sheet.....	85@ 86	68@ 70	72@ 73
Guayule.....	75@ 76	60@ 61	75@ 76
Balata, sheet.....	—@—	82@ 84	95@ 96
Balata, block.....	—@—	58@ 67	72@ 73

AFRICAN.

Lopori, ball, prime.....	152@153	109@110	132@133
Lopori, strip, prime.....	none here	none here	none here
Aruwimi.....	none here	105@106	125@126
Upper Congo, ball, red.....	133@134	109@110	132@133
Ikelemba.....	none here	none here	none here
Sierra Leone, 1st quality.....	135@136	105@106	135@136
Massai, red.....	136@137	106@107	135@136
Soudan niggers.....	none here	94@ 95	none here
Cameroon, ball.....	94@ 95	62@ 63	88@ 90
Benguela.....	88@ 89	75@ 76	80@ 81
Madagascar, pinky.....	110@112	none here	105@106
Accra flake.....	30@ 31	40@ 41	43@ 44

EAST INDIAN.

Assam.....	100@101	90@ 91	105@106
Pontianak.....	63 1/4@ 7	6 1/2@ 8	7 1/4@ 7 1/2
Borneo.....	none here	none here	none here

Late Pará cables quote:

	Per Kilo.		Per Kilo.
Islands, fine.....	7\$000	Upriver, fine.....	9\$000
Islands, coarse.....	3\$800	Upriver, coarse.....	7\$000
		Exchange.....	16 1-16

Latest Manáos advices:

Upriver, fine.....	9\$200	Exchange.....	16 1-16
Upriver, coarse.....	4\$900		

African Rubbers.

NEW YORK STOCKS (IN TONS).

January 1, 1910.....	228	August 1, 1910.....	250
February 1.....	134	September 1.....	300
March 1.....	161	October 1.....	375
April 1.....	121	November 1.....	100
May 1.....	125	December 1.....	140
June 1.....	90	January 1, 1911.....	115
July 1.....	120	February 1.....	115

Statistics of Para Rubber (Excluding Caucho).

NEW YORK.

	Fine and Medium	Coarse.	Total 1911.	Total 1910.	Total 1909.
Stocks, January 1.....tons	181	30 =	211	207	244
Arrivals, January.....	888	464 =	1,352	2,040	1,778
Aggregating	1,069	494 =	1,563	2,247	2,022
Deliveries, January	866	455 =	1,321	2,015	1,787
Stocks, January 31.....	203	39 =	242	232	235

	PARA.	ENGLAND.	1911.	1910.	1909.
Stocks, January 1, tons	675	150	695	1,490	385
Arrivals, January	3,620	4,500	4,335	1,038	810
Aggregating	4,295	4,650	5,030	2,528	1,195
Deliveries, January	2,530	3,480	3,955	1,303	850
Stocks, January 31..	1,765	1,170	1,075	1,225	345

	1911.	1910.	1909.
Worlds visible supply, January 31.....tons	4,582	4,083	3,540
Pará receipts, July 1 to January 31.....	17,020	19,470	18,410
Pará receipts of caucho, same dates	2,950	2,920	2,840
Afloat from Pará to United States, Jan. 31.	465	1,160	890
Afloat from Pará to Europe, January 31....	885	1,170	1,080

New York.

In regard to the financial situation, Albert B. Beers (broker in crude rubber and commercial paper, No. 68 William street, New York), advises as follows: "During February the demand for commercial paper has been very good, both from city banks and out of town, at easy rates, the best rubber names ruling at $4\frac{1}{2}$ @ $4\frac{3}{4}$ per cent. and those not so well known at 5 @ $5\frac{1}{2}$ per cent."

NEW YORK PRICES FOR JANUARY (NEW RUBBER).

	1911.	1910.	1909.
Upriver, fine	\$1.15@1.30	\$1.78@1.87	\$1.20@1.22
Upriver, coarse .....	.90@.98	1.11@1.15	.90@.92
Islands, fine	1.00@1.15	1.67@1.81	1.13@1.16
Islands, coarse .....	.62@.69	.71@.75	.55@.59
Cametá .....	.64@.73	.79@.85	.62@.64

British Crude Rubber Imports.

OFFICIAL statistics for ten calendar years, stated in pounds:

Year.	Imports.	Exports.	Net Imports.
1901	52,245,088	32,904,704	19,340,384
1902	46,970,000	32,676,112	14,293,888
1903	54,443,760	37,658,768	16,784,992
1904	55,555,584	33,415,536	22,140,048
1905	66,464,944	37,464,112	29,000,832
1906	67,992,624	36,988,336	31,004,288
1907	74,736,928	39,090,912	35,646,016
1908	64,407,392	40,153,792	24,253,600
1909	78,406,944	44,567,488	33,839,456
1910	98,220,416	52,401,664	45,818,752

GUTTA-PERCHA.

Year.	Imports.	Exports.	Net Imports.
1901	9,905,056	1,224,832	8,680,224
1902	9,395,568	1,190,784	8,204,784
1903	5,198,032	741,664	4,456,368
1904	3,056,256	890,624	2,165,632
1905	5,088,608	1,020,880	4,067,728
1906	5,966,352	973,952	4,992,400
1907	6,516,048	1,268,624	5,247,424
1908	3,575,936	521,920	3,054,016
1909	5,064,864	680,736	4,384,128
1910	10,870,048	762,608	10,107,440

Liverpool.

WILLIAM WRIGHT & Co., report [February 1]:

Fine Pará.—The market has been active, mainly owing to speculative manipulation, with considerable fluctuation in price. During the early part of the month prices declined 7d. per pound, but this has since been fully recovered and values at the close are about the same as last month. The late advance is mainly due to the combination of Brazilian receivers. How long they will be able to force up prices time will tell, but for the present the tendency is towards a further enhancement of values. Pará receipts are small and the crop at present is 2,290 tons less than last season. There is talk of a permanent shortage this season; time will prove if this is correct. Closing values: Upriver 5s. 7d. [= \$1.36]; Islands 5s. [= \$1.22].

Rotterdam Rubber Statistics.

INDIA-RUBBER.

	1908.	1909.	1910.
Stocks, January 1.....kilos	86,800	55,000	40,000
Arrivals during year.....	1,273,400	1,146,470	1,138,450
Aggregating	1,360,200	1,201,470	1,178,450
Deliveries during year.....	1,305,200	1,161,470	1,026,850
Stocks, December 31.....	55,000	40,000	151,600

BALATA (SURINAM SHEET).			
Stocks, January 1.....kilos	nil	18,000	nil
Arrivals during year.....	330,000	540,000	543,000
Aggregating	330,000	558,000	543,000
Deliveries during year.....	312,000	558,000	543,000
Stocks, December 31.....	18,000	nil	nil

GUTTA-PERCHA.			
Stocks, January 1.....kilos	121,300	110,500	100,500
Arrivals during year.....	37,800	26,000	14,400
Aggregating	159,100	136,500	114,900
Deliveries during year.....	48,600	36,000	112,400
Stocks, December 31.....	110,500	100,500	2,500

Amsterdam.

F. JOOSTEN reports [February 3]:

The lots offered today in tendersale met with fair competition and of the total quantity of about 19,500 kilos about 16,100 kilos were sold at about valuations for the better and somewhat below valuations for the lower grades. Demand continued after the sale for most of the unsold lots but owners refused to make the moderate concessions proposed.

IMPORTS FROM PARA AT NEW YORK.

The Figures Indicate Weight in Pounds.

JANUARY 23.—By the steamer *Acra*, from Pará:

	Fine.	Medium.	Coarse.	Caucho.	Total.
New York Commercial Co.	44,000	5,000	24,800	4,400 =	78,200
A. T. Morse & Co.	26,800	4,900	38,300	1,300 =	71,300
Poel & Arnold	1,800	700	37,000	9,200 =	48,700
Hagemeyer & Brunn	28,000	.....	10,800	..... =	38,800
H. A. Astlett	6,800	1,100	5,900	..... =	13,800
Total	107,400	11,700	116,800	14,900 =	250,800

JANUARY 24.—By the steamer *Cearense*, from Manáos and Pará:

Poel & Arnold	210,600	76,400	60,600	14,900 =	362,500
A. T. Morse & Co.	206,100	25,600	57,700	900 =	290,300
New York Commercial Co.	30,900	17,600	37,200	19,500 =	105,200
Henderson & Korn	13,900	1,600	20,100	..... =	35,600
Total	461,500	121,200	175,600	35,300 =	793,600

JANUARY 25.—By the steamer *Gregory*, from Iquitos:

G. Amsinck & Co.	72,100	6,400	18,100	22,500 =	119,100
Thomsen & Co.	28,500	2,900	9,600	9,800 =	50,800
H. A. Astlett	28,900	5,000	13,000	4,900 =	51,800
W. R. Grace & Co.	7,600	.....	3,300	1,200 =	12,100
P. C. Kuyper & Co.	7,200	.....	.....	..... =	7,200
Total	144,300	14,300	44,000	38,400 =	241,000

FEBRUARY 3.—By the steamer *Christopher*, from Manáos and Pará:

Poel & Arnold	191,200	63,300	158,400	22,200 =	435,100
New York Commercial Co.	115,400	18,800	71,400	14,000 =	219,600
A. T. Morse & Co.	34,700	7,700	88,000	9,400 =	139,800
Henderson & Korn	10,000	.....	36,800	23,400 =	70,200
Total	351,300	89,800	354,600	69,000 =	864,700

FEBRUARY 11.—By the steamer *Goyaza*, from Pará:

Henderson & Korn	22,500	2,000	40,100	3,100 =	67,700
A. T. Morse & Co.	50,300	.....	4,000	..... =	54,300
Hagemeyer & Brunn	21,400	.....	17,200	..... =	38,600
Total	94,200	2,000	61,300	3,100 =	160,600

FEBRUARY 16.—By the steamer *Polyarp*, from Manáos and Pará:

Poel & Arnold	131,500	44,400	98,300	139,100 =	413,300
A. T. Morse & Co.	74,200	11,000	113,100	106,800 =	305,100
New York Commercial Co.	18,300	11,400	26,000	115,200 =	170,900
Henderson & Korn	26,500	7,800	28,100	3,700 =	66,100
G. Amsinck & Co.	2,100	1,300	.....	..... =	3,400
Total	252,600	75,900	267,500	364,800 =	958,800

PARA RUBBER VIA EUROPE.

JAN. 25.—By the <i>Campania</i> —Liverpool:	POUNDS.
Robinson & Co. (Fine).....	18,000
N. Y. Commercial Co. (Coarse).....	17,000
Poel & Arnold (Caucho).....	18,000
	53,000

JAN. 23.—By the <i>Mauretania</i> —Liverpool:	POUNDS.
A. T. Morse & Co. (Coarse).....	4,500
Rubber Trading Co. (Caucho).....	8,000
	12,500

JAN. 27.—By the <i>Mauretania</i> —Liverpool:	POUNDS.
Poel & Arnold (Caucho).....	5,500
Robinson & Co. (Fine).....	2,500
	8,000

FEB. 3.—By the <i>Lusitania</i> —Liverpool:	POUNDS.
N. Y. Commercial Co. (Coarse).....	45,000
Poel & Arnold (Caucho).....	22,500
	67,500

FEB. 11.—By the <i>Campania</i> —Liverpool:	POUNDS.
C. P. dos Santos (Coarse).....	9,000
James T. Johnstone (Fine).....	2,500
	11,500

FEB. 15.—By the <i>Clyde</i> —Mollendo:	POUNDS.
General Rubber Co. (Fine).....	2,500
General Rubber Co. (Caucho).....	2,500
	5,000

FEB. 17.—By the <i>President Lincoln</i> —Hamburg:	POUNDS.
N. Y. Commercial Co. (Fine).....	13,500

FEB. 17.—By the <i>Mauretania</i> —Liverpool:	POUNDS.
Robinson & Co. (Fine).....	34,000
Poel & Arnold (Fine).....	5,500
	39,500

OTHER NEW YORK ARRIVALS.

CENTRALS.

[*This sign, in connection with imports of Centrals, denotes Guayule rubber.]

JAN. 23.—By the <i>Panama</i> —Colon:	POUNDS.
G. Amsinck & Co.	13,000
Fidanque Bros. & Co.	4,500
A. T. Morse & Co.	3,000
Isaac Brandon & Bros.	1,000
	21,500

JAN. 23.—By the <i>Vigilancia</i> —Tampico:	POUNDS.
Ed. Maurer	*135,000
Poel & Arnold	*26,000
For Europe	*25,000
	*186,000

JAN. 23.—By the <i>Frutera</i> —Honduras:	POUNDS.
George A. Alden & Co.	2,500
Wessels Kulenkampff & Co.	2,500
A. Rosenthal & Sons.	1,000
	6,000

JAN. 23.—By the <i>Stangeren</i> —Bluefields:	POUNDS.
Manhattan Rubber Manufacturing Co.	10,000
Atlantic Fruit Co.	2,000
	12,000

JAN. 24.—By the <i>Allemania</i> —Colombia:	POUNDS.
Caballero & Blanco	5,500
A. Held	2,500
R. Del Castillo & Co.	2,000
Delima Cortissoz & Co.	1,500
G. Amsinck & Co.	1,500
Ogliascri & Martinez.	1,000
Maitland, Coppell & Co.	1,000
Iglesias Lobo & Co.	1,000
Suzarte & Whitney.	1,000
	17,000

JAN. 26.—By the <i>Esperanza</i> —Mexico:	POUNDS.
Iglesias Lobo & Co.	9,000
Harburger & Stack.	2,000
George A. Alden & Co.	1,000
H. Marquardt & Co.	1,000
International Products Co.	1,000
	14,000

JAN. 30.—By the <i>Allianza</i> —Colon:	POUNDS.
G. Amsinck & Co.	5,500
Dumarest Bros. & Co.	3,500
New York Commercial Co.	5,500
Isaac Brandon & Bros.	4,000
Charles E. Griffin.	3,000
Roldan & Van Sickle.	3,000
Hirzel, Feltman & Co.	2,500
Frank Lapiedra	2,500
L. Johnson & Co.	3,000
	34,500

JAN. 30.—By the <i>Prinz Eitel Friedrich</i> —Colombia:	POUNDS.
Caballero & Blanco	2,500
Kunhardt & Co.	2,500
L. Johnson & Co.	3,000
Lionel Hageners & Co.	2,000
	10,000

JAN. 3.—By the <i>San Juan</i> —New Orleans:	POUNDS.
A. T. Morse & Co.	7,500
Robinson & Co.	3,500
N. Y. Commercial Co.	3,000
Loggers & Heimlein.	2,500
	16,500

FEB. 1.—By the <i>Sarnia</i> —Greytown:	POUNDS.
G. Amsinck & Co.	7,000
A. Held	3,000
Pablo Calvert & Co.	1,000
Delima Cortissoz & Co.	1,000
	12,000

FEB. 3.—By the <i>Mea</i> —Frontera:	POUNDS.
Harburger & Stack.	6,500
Rubber Trading Co.	3,500
Mexican Produce Co.	1,500
J. W. Wilson & Co.	1,000
H. Marquardt & Co.	1,000
George A. Alden & Co.	1,000
	14,500

FEB. 3.—By the <i>Santiago</i> —Tampico:	POUNDS.
Ed. Maurer	*125,000
Continental-Mexican Rubber Co.	*75,000
New York Commercial Co.	*70,000
For Europe	*55,000
	*325,000

FEB. 6.—By the <i>Colon</i> —Colon:	POUNDS.
G. Amsinck & Co.	17,000
L. Johnson & Co.	9,000
Wessels Kulenkampff & Co.	4,000
J. Julia & Co.	2,000
R. Arebella Co.	2,000
Piza, Nephews & Co.	4,000
Maitland, Coppell & Co.	2,000
P. V. Rubio & Co.	2,000
Dumarest Bros. & Co.	1,500
A. T. Morse & Co.	2,000
J. Sambrada & Co.	1,500
Isaac Brandon & Bros.	1,500
Mecke & Co.	1,500
Gillespie Bros. & Co.	1,000
American Trading Co.	1,000
A. Rosenthal & Sons.	1,000
	53,000

FEB. 6.—By the <i>Seguranca</i> —Tampico:	POUNDS.
Continental-Mexican Rubber Co.	*185,000
New York Commercial Co.	*100,000
Ed. Maurer	*55,000
For Europe	*55,000
	*395,000

FEB. 6.—By the <i>Proteus</i> —New Orleans:	POUNDS.
Robinson & Co.	10,000

FEB. 6.—By the <i>El Oriente</i> —Galveston:	POUNDS.
Continental-Mexican Rubber Co.	*85,000
Charles T. Wilson.	*22,500
E. S. Churchill	*7,000
	*114,500

FEB. 10.—By the <i>Morro Castle</i> —Frontera:	POUNDS.
E. Steiger & Co.	5,000
H. Marquardt & Co.	4,500
La Zacualpa Rubber Plantation Co.	2,000
Rubber Trading Co.	1,500
International Products Co.	1,500
Harburger & Stack.	1,000
	15,500

FEB. 10.—By the <i>El Cid</i> —Galveston:	POUNDS.
Continental-Mexican Rubber Co.	*112,000
Charles T. Wilson.	*8,000
	*120,000

FEB. 10.—By the <i>Advance</i> —Colon:	POUNDS.
J. Sambrada & Co.	3,000
G. Amsinck & Co.	2,000
Mecke & Co.	1,000
A. M. Capen's Sons.	1,000
Dumarest Bros. & Co.	1,000
A. Held	1,000
Isaac Brandon & Bros.	1,000
	10,000

FEB. 11.—By the <i>Campania</i> —Liverpool:	POUNDS.
C. P. dos Santos.	9,000

FEB. 14.—By the <i>Stangeren</i> —Bluefields:	POUNDS.
Manhattan Rubber Manufacturing Co.	6,000

FEB. 14.—By the <i>Antilles</i> —Tampico:	POUNDS.
Ed. Maurer	*95,000
New York Commercial Co.	*67,000
Continental-Mexican Rubber Co.	*45,000
	*207,000

FEB. 14.—By the <i>Eastern Prince</i> —Bahia:	POUNDS.
Poel & Arnold	13,500
J. H. Rosbach & Bros.	3,500
	17,000

FEB. 14.—By the <i>El Sud</i> —Galveston:	POUNDS.
Continental-Mexican Rubber Co.	*235,000
Charles T. Wilson.	*15,000
	*250,000

FEB. 14.—By the <i>Prinz Sigismund</i> —Colombia:	POUNDS.
A. Held	3,500
Kunhardt & Co.	3,500
Lionel Hageners & Co.	3,500

R. DE LUGO & CO.	POUNDS.
A. Jaramillo & Co.	1,500
G. Amsinck & Co.	1,500
For Hamburg	5,500
	21,000

FEB. 15.—By the <i>Sarnia</i> —Colon:	POUNDS.
G. Amsinck & Co.	8,000
Maitland, Coppell & Co.	5,500
Mecke & Co.	2,500
A. M. Capen's Sons.	2,500
W. R. Grace & Co.	2,500
Pablo Calvert & Co.	2,000
Suzarte & Whitney.	1,500
A. Rosenthal & Sons.	1,500
Wessels Kulenkampff & Co.	1,000
American Trading Co.	1,000
Roldan & Van Sickle.	1,000
Delima Cortissoz & Co.	1,000
Isaac Brandon & Bros.	1,000
	31,000

FEB. 16.—By the <i>Frutera</i> —Honduras:	POUNDS.
A. Rosenthal & Sons.	6,500
West Coast Rubber Co.	1,000
Schlutte Bauman Co.	1,000
George A. Alden & Co.	1,000
	9,500

FEB. 16.—By the <i>Comus</i> —New Orleans:	POUNDS.
A. N. Rotholz	10,000

FEB. 17.—By the <i>Mauretania</i> —Liverpool:	POUNDS.
Poel & Arnold.	8,000

FEB. 17.—By the <i>Panama</i> —Colon:	POUNDS.
G. Amsinck & Co.	11,500
American Trading Co.	3,000
J. Julia & Co.	2,500
Wessels Kulenkampff & Co.	2,500
Meyer Hecht	1,500
F. Rosenstein & Co.	1,500
Piza, Nephews & Co.	1,000
Isaac Brandon & Bros.	1,000
	24,500

AFRICAN.

JAN. 23.—By the <i>Campania</i> —Liverpool:	POUNDS.
George A. Alden & Co.	15,500
Poel & Arnold.	13,500
Raw Products Co.	13,500
Rubber Import Co.	5,500
	48,000

JAN. 23.—By the <i>Moltke</i> —Hamburg:	POUNDS.
A. T. Morse & Co.	7,000
Robert Badenhop	4,500
	11,500

JAN. 25.—By the <i>Dinnamare</i> —Lisbon:	POUNDS.
George A. Alden & Co.	11,500

JAN. 25.—By the <i>Vaderland</i> —Antwerp:	POUNDS.
A. T. Morse & Co.	22,500
Livesey & Co.	7,000
Wallace L. Gough Co.	4,500
James T. Johnstone.	4,500
	38,500

JAN. 27.—By the <i>Mauretania</i> —Liverpool:	POUNDS.
Poel & Arnold.	22,500
Robinson & Co.	2,500
	25,000

JAN. 28.—By the <i>Palermo</i> —Lisbon:	POUNDS.
A. T. Morse & Co.	11,000

JAN. 31.—By the <i>Arabic</i> —Liverpool:	POUNDS.
Poel & Arnold.	11,500
Rubber Trading Co.	9,000
George A. Alden & Co.	7,000
James T. Johnstone.	7,000
	34,500

FEB. 3.—By the <i>Finland</i> —Antwerp:	POUNDS.
A. T. Morse & Co.	75,000

FEB. 3.—By the <i>Chicago</i> —Havre:	POUNDS.
Robert Badenhop	11,500

FEB. 3.—By the <i>Lusitania</i> —Liverpool:	POUNDS.
Poel & Arnold	7,000

FEB. 3.—By the <i>Florida</i> —Bordeaux:	POUNDS.
Raw Products Co.	7,000

FEB. 4.—By the <i>Pennsylvania</i> —Hamburg:	POUNDS.
Poel & Arnold	37,000
George A. Alden & Co.	13,500
A. T. Morse & Co.	6,000
General Rubber Co.	11,500
Rubber Trading Co.	13,500
Wallace L. Gough Co.	5,500
Robert Badenhop	3,500
	90,500

FEB. 6.—By the <i>Baltic</i> —Liverpool:	POUNDS.
George A. Alden & Co.	5,000
Rubber Trading Co.	2,000
	7,000

FEB. 8.—By the <i>Kroonland</i> —Antwerp:	POUNDS.
George A. Alden & Co.	75,000
A. T. Morse & Co.	25,000
Poel & Arnold	7,000
Wallace L. Gough Co.	9,000
Rubber Trading Co.	9,000
	125,000

FEB. 9. By the <i>Adriatic</i> =London	
Poel & Arnold	11,500
FEB. 10.—By the <i>Campania</i> =Liverpool:	
Rubber Trading Co.	11,500
FEB. 11. By the <i>Campania</i> =Liverpool:	
James T. Johnstone	11,500
Henry A. Gould Co.	7,000
C. P. dos Santos	7,000
FEB. 14. By the <i>La Gouge</i> =Havre:	
Poel & Arnold	44,500
James T. Johnstone	4,500
Robert Badenhop	3,500
FEB. 17. By the <i>President Lincoln</i> =Hamburg:	
A. T. Morse & Co.	20,000
George A. Alden & Co.	6,500
Wallace L. Gough Co.	22,500
Livestock & Co.	11,500
Robert Badenhop	2,500
FEB. 17.—By the <i>Mauretania</i> =Liverpool:	
Poel & Arnold	5,500
Henry A. Gould Co.	4,500

EAST INDIAN.

[*Denotes plantation rubber.]

JAN. 23. By the <i>Campania</i> =Liverpool:	
William H. Stiles	*15,000
JAN. 23. By the <i>Manitanka</i> =London:	
New York Commercial Co.	*34,000
Poel & Arnold	*15,000
A. T. Morse & Co.	*11,500
Robinson & Co.	*11,500
JAN. 25. By the <i>Vanderbilt</i> =Antwerp:	
A. T. Morse & Co.	*13,500
JAN. 25. By the <i>Oceanic</i> =London:	
Poel & Arnold	*45,000
New York Commercial Co.	*9,000
William H. Stiles	*9,000
JAN. 26. By the <i>Hudson</i> =Singapore:	
Ed. Maurer	*5,500
Wallace L. Gough Co.	*27,000
Malaysian Rubber Co.	*17,000
Wallace L. Gough Co.	33,500
Ed. Maurer	11,500
Haebler & Co.	4,500
JAN. 30. By the <i>Hafslund</i> =London:	
New York Commercial Co.	*55,000
A. T. Morse & Co.	*13,500
Thomson & Co.	*9,000
FEB. 2. By the <i>Mesaba</i> =London:	
A. T. Morse & Co.	*13,500
Raw Products Co.	*5,500
FEB. 3. By the <i>Infant</i> =Antwerp:	
A. T. Morse & Co.	*45,000
FEB. 3. By the <i>St. Paul</i> =London:	
Poel & Arnold	*90,000
New York Commercial Co.	*55,000
A. T. Morse & Co.	*15,500
Robinson & Co.	*11,000
FEB. 3. By the <i>Luxitania</i> =Liverpool:	
William H. Stiles	*11,500
Henderson & Korn	*9,000

FEB. 6. By the <i>Manitanka</i> =London:	
Poel & Arnold	*34,000
James T. Johnstone	*13,500
Ed. Maurer	7,500
New York Commercial Co.	*5,500
FEB. 8. By the <i>Kyushu</i> =Amoy:	
A. T. Morse & Co.	*55,000
FEB. 8. By the <i>Frederick</i> =Singapore:	
Ed. Maurer	20,000
Wallace L. Gough Co.	5,500
FEB. 9.—By the <i>Adriatic</i> =London:	
New York Commercial Co.	*22,000
FEB. 11. By the <i>Trident</i> =Columbia:	
New York Commercial Co.	*35,000
A. T. Morse & Co.	*30,000
Thomson & Co.	*20,000
FEB. 14.—By the <i>Minneapolis</i> =London:	
New York Commercial Co.	*25,000
Poel & Arnold	*20,000
FEB. 14.—By the <i>Bisley</i> =Singapore:	
Wallace L. Gough Co.	*9,000
FEB. 15. By the <i>Gothland</i> =Antwerp:	
A. T. Morse & Co.	*16,000
FEB. 16. By the <i>St. Louis</i> =London:	
Poel & Arnold	*15,000
New York Commercial Co.	*2,000
FEB. 16. By the <i>Aragonia</i> =Singapore:	
Ed. Maurer	*11,500
Malaysian Rubber Co.	8,000
Wallace L. Gough Co.	*5,500
Ed. Maurer	5,500
Poel & Arnold	7,000
Haebler & Co.	11,000

GUTTA-JELUTONG.

JAN. '06. By the <i>Hudson</i> =Singapore:	
L. Littlejohn & Co.	500,000
Haebler & Co.	275,000
Wallace L. Gough Co.	250,000
George A. Alden & Co.	125,000
Robinson & Co.	100,000
Poel & Arnold	100,000
FEB. 8.—By the <i>Indrapura</i> =Singapore:	
L. Littlejohn & Co.	135,000
FEB. 14. By the <i>Bisley</i> =Singapore:	
L. Littlejohn & Co.	210,000
Haebler & Co.	175,000
Wallace L. Gough Co.	56,000
FEB. 15.—By the <i>Aragonia</i> =Singapore:	
Wallace L. Gough Co.	150,000
Haebler & Co.	125,000
L. Littlejohn & Co.	175,000
BALATA.	
JAN. 25.—By the <i>Suriname</i> =Trinidad:	
G. Amsinck & Co.	5,500
Suzarte & Whitney	2,500
Ed. Maurer	2,000

FEB. 8. By the <i>Queen</i> =Demerara:	
Middleton & Co.	7,000
FEB. 14.—By the <i>Saramacca</i> =Trinidad:	
G. Amsinck & Co.	11,500
Middleton & Co.	5,500
Robert A. De L.	5,000

GUTTA-PERCHA.

JAN. '06. By the <i>Frederick</i> =Singapore:	
L. Littlejohn & Co.	25,000
Ed. Maurer	33,500
Wallace L. Gough Co.	22,500
FEB. 8. By the <i>Frederick</i> =Singapore:	
L. Littlejohn & Co.	45,000
Haebler & Co.	30,000
FEB. 14. By the <i>Bisley</i> =Singapore:	
Haebler & Co.	45,000
FEB. 15.—By the <i>Aragonia</i> =Singapore:	
Ed. Maurer	25,000
L. Littlejohn & Co.	45,000
FEB. 17.—By the <i>President Lincoln</i> =Hamburg:	
Robert Soltan & Co.	15,000

CUSTOM HOUSE STATISTICS.

PORT OF NEW YORK, JANUARY.

Imports:	Pounds.	Value.
India-rubber	5,744,852	\$5,281,502
Balata	122,199	87,607
Gutta-percha	84,086	16,187
Gutta-jelutong (Pontianak)	5,458,187	247,061
Guayule	1,288,300	637,820
Total	12,697,624	\$6,270,177
Exports:	Pounds.	Value.
India-rubber	194,799	\$147,002
Balata	45,173	38,513
Gutta-percha	26,972	11,274
Guayule	41,610	5,138
Rubber scrap, imported	964,620	\$79,669
Rubber scrap, exported	269,427	28,019

BOSTON ARRIVALS.

JAN. 4.—By the <i>Winifreda</i> =Liverpool:	
Poel & Arnold (Africans)	11,200
George A. Alden & Co. (Africans)	3,500
JAN. 12.—By the <i>Ivernia</i> =Liverpool:	
George A. Alden & Co. (Africans)	11,500
JAN. 30.—By the <i>Indrapura</i> =Singapore:	
State Rubber Co. (East Indian)	37,000
State Rubber Co. (Jelutong)	800,000
Wallace L. Gough Co.	125,000

PARA EXPORTS OF INDIA-RUBBER FOR 1910 (IN KILOGRAMS).

EXPORTERS.	NEW YORK.				EUROPE.				EUROPE.			
	Fine.	Medium.	Coarse.	Caucho.	TOTAL.	Fine.	Medium.	Coarse.	Caucho.	TOTAL.	TOTAL.	TOTAL.
Gruener & Co.—Pará	2,665,512	560,758	1,406,530	733,811	5,366,611	3,463,293	359,391	945,308	1,984,342	6,752,334	12,118,945	
Dusendtschön, Zarges & Co.—												
Manaos	954,382	229,511	518,329	240,617	1,942,839	1,844,560	217,350	331,987	692,859	3,086,756	5,029,595	
Scholz, Hartje & Co., Pará												
Scholz & Co., Manãos	1,184,849	297,563	576,634	395,029	2,454,075	1,088,558	285,001	504,244	435,730	2,313,533	4,767,608	
Ad. H. Alden, Ltd., Pará-Manãos	880,820	26,498	1,098,231	23,793	2,029,342	992,622	87,247	224,533	295,621	1,600,023	3,629,365	
E. Pinto Alves & Co., Pará	1,094,684	215,417	366,632	40,776	1,717,509	582,140	123,986	158,718	556,158	1,421,002	3,138,511	
Gordon & Co., Pará-Manãos	268,177	32,063	232,229	3,063	535,532	616,569	100,387	282,673	236,473	1,236,102	1,771,634	
J. Marques, Pará												
Suárez Hermanos & Co., Pará												
Manaos												
R. O. Ahlers & Co., Pará	86,696	340	15,823	127,470	230,329	355,007	5,281	67,921	90,200	518,409	748,738	
Ahlers & Co., Manãos												
The Alves Braga Rubber Estates &												
Trading Co., Ltd.												
De Lagotellerie & Co., Pará-Manãos	119,529	17,332	52,626	2,802	192,289	67,017	60,129	81,577	33,910	583,824	583,824	
Pires Teixeira & Co., Pará	53,380		82,500		135,880	58,650	24,569	28,573	25,503	145,662	337,951	
S. A. Armazens Andresen, Manãos												
Mello & Co., Pará-Manãos	20,331	6,170	3,886	667	30,754	81,080	23,083	31,039	103,299	224,869	224,869	
J. G. Araujo, Manãos	9,710	1,861	11,518	2,374	25,463	44,611	9,708	21,034	27,373	139,215	169,969	
Leite & Co., Incorp., Pará-Manãos												
E. Knebel & Co., Manãos	4,709	425	1,154	22,693	28,981	14,914	11,276	6,740	2,122	81,703	81,703	
Gunzburger & Co., Manãos			1,260	1,230	2,490	1,368	5,497	4,684	14,824	39,919	68,900	
Guilherme Aug. de Miranda Filho,												
Pará	11,400	5,382	13,258	3,436	33,476	8,695	1,814	10,714		21,223	54,699	
Braga Sobrinho & Co., Pará												
Sunabris	52,530	11,900	75,476	2,523	141,429	328,289	663	7,250	2,980	28,456	28,456	
Itacatiara direct	10,049	1,922	5,648	64	17,683	49,527	100,060	137,039	280,662	846,050	988,473	
Itacatiara direct	83,652	5,169	27,680	58,313	174,814	714,199	8,751	35,066	3,929	97,273	114,956	
Total	7,500,410	1,412,311	4,489,108	1,658,661	15,060,490	11,673,302	1,506,752	3,382,432	6,416,842	22,979,328	38,039,818	



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Review of the Crude Rubber Market

Rubber Receipts at Manaos.

DURING December and six months of the crop season, for three years (courtesy of Messrs. Scholz & Co.):

FROM	DECEMBER.			JULY-DECEMBER.		
	1910.	1909.	1908.	1910.	1909.	1908.
Rio Purús-Acre.....tons	556	423	775	4,054	3,898	3,846
Rio Madeira.....	229	379	453	1,641	2,017	1,917
Rio Jurua.....	667	550	838	1,203	1,491	1,825
Rio Javary-Iquitos.....	324	265	536	1,441	1,779	1,763
Rio Solimões.....	251	244	158	804	709	667
Rio Negro.....	58	171	105	71	261	124
Total.....	2,085	2,032	2,865	9,214	10,155	10,142
Caucho.....	301	349	884	1,412	1,882	1,954
Total.....	2,386	2,381	3,749	10,626	12,037	12,096

For Shipment from

Manaos.....	1,974	2,038	3,264	8,278	9,621	9,993
Para.....	412	343	485	2,348	2,416	2,163
Total.....	2,386	2,381	3,749	10,626	12,037	12,096

Antwerp.

RUBBER STATISTICS FOR JANUARY.

DETAILS.	1911.	1910.	1909.	1908.	1907.
Stocks, January 1.....kilos	588,212	541,512	595,735	1,006,894	658,184
Arrivals in January.....	549,956	261,867	283,955	547,968	317,692
Congo sorts.....	403,421	202,547	186,189	504,451	242,806
Other sorts.....	146,535	59,320	97,766	43,517	74,886
Aggregating.....	1,138,168	803,379	879,690	1,554,862	975,876
Sales in January.....	492,749	321,217	281,913	294,853	357,226
Stocks, January 31.....	645,419	482,162	597,777	1,260,009	618,650
Arrivals since Jan. 1.....	549,956	261,867	283,955	547,968	317,692
Congo sorts.....	403,421	202,547	186,189	504,451	242,806
Other sorts.....	146,535	59,320	97,766	43,517	74,886
Sales since Jan. 1.....	492,749	321,217	281,913	294,853	357,226

RUBBER ARRIVALS FROM THE CONGO.

JANUARY 27.—By the steamer *Albertville*:

Bunge & Co.....(Société Générale Africaine) kilos	104,000
Do.....(Chemins de fer Grands Lacs)	5,700
Do.....(Cie. du Kasai)	64,800
Do.....(Belkika)	500
Do.....(Comptoir Commercial Congolais)	14,200
L. & W. Van de Velde.....	3,000
Charles Dethier.....(American Congo Co.)	2,450 194,650

Plantation Rubber from the Far East.

EXPORTS OF CEYLON GROWN RUBBER.

[From January 1 to December 31, 1909 and 1910. Compiled by the Ceylon Chamber of Commerce.]

	1909.	1910.
To United States.....pounds	470,812	1,610,395
To Canada.....	7,476	7,476
To Great Britain.....	830,339	1,572,119
To Belgium.....	35,908	76,827
To Germany.....	21,309	16,956
To Australia.....	8,893	5,858
To Japan.....	.....	4,951
To Italy.....	1,113	1,909
To France.....	1,639	1,120
To Austria.....	213	1,041
To China.....	2,184	.....
Total.....	1,372,416	3,298,652

[Same period 1908—831,905 pounds; same 1907—530,908.]

TOTAL EXPORTS FROM MALAYA.

[From January 1 to dates named. Reported by Barlow & Co., Singapore. These figures include the production of the Federated Malay States, but not of Ceylon.]

FROM—	1908.	1909.	1910.
Singapore (to Dec. 31).....pounds	2,060,238	2,412,617	3,764,877
Penang (to Dec. 31).....	1,468,584	2,088,133	2,454,907
Port Swettenham (to Dec. 26).....	2,960,320	8,349,523	8,349,523
Total.....	3,528,822	7,461,070	14,569,307

Para.

R. O. AHLERS & Co. report [February 1]:

It seems certain that the Brazilian government is attempting a valorization scheme for rubber, on lines similar to those adopted for coffee. Considerable initial purchases have been made at prices well above the Liverpool parity, but details of the scheme have not yet been made public. As there is every appearance of a short crop on the Amazon, there is undoubtedly some prospect of better prices.

Rubber Scrap Prices.

LATE NEW YORK quotations—prices paid by consumers for carload lots, per pound—are practically unchanged, as follows:

	February 1.	March 1.
Old rubber boots and shoes—domestic..	9¼@ 9¾	9¼@ 9¾
Old rubber boots and shoes—foreign..	8¾@ 8¾	8¾@ 8¾
Pneumatic bicycle tires.....	4½@ 4¾	4½@ 4¾
Automobile tires.....	8¼@ 8¾	8¼@ 8¾
Solid rubber wagon and carriage tires..	8½@ 9	8½@ 9
White trimmed rubber.....	11 @ 11½	11 @ 11½
Heavy black rubber.....	5 @ 5½	4¾@ 5¼
Air brake hose.....	4¾@ 5	4¾@ 5
Garden hose.....	2 @ 2¼	2 @ 2¼
Fire and large hose.....	2½@ 2¾	2½@ 2¾
Matting.....	1 @ 1½	1 @ 1½

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is especially true of the rubber
lustry.

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CONSULTING CHEMIST
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INDIA RUBBER WORLD

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DICHORPIS GUTTA
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Edited by HENRY C. PEARSON—Offices, No. 15 West 38th Street, NEW YORK.

Vol. XLIV. No. 1.

APRIL 1, 1911.

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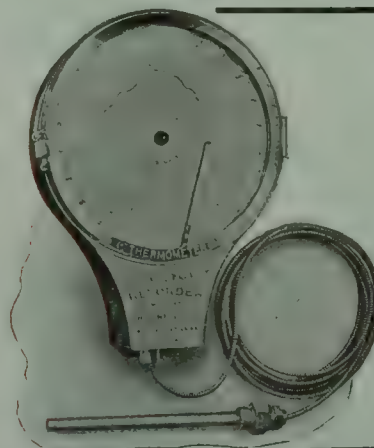
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Published on the 1st of each Month by

THE INDIA RUBBER PUBLISHING CO.

No. 15 West 38th Street, New York.

CABLE ADDRESS: IRWORLD, NEW YORK.

HENRY C. PEARSON, Editor

Vol. 44.

APRIL 1, 1911.

No. 1.

SUBSCRIPTIONS: \$3.00 per year, \$1.75 for six months, postpaid, for the United States and dependencies and Mexico. To the Dominion of Canada and all other countries, \$3.50 (or equivalent funds) per year, postpaid.

ADVERTISING: Rates will be made known on application.

REMITTANCES: Should always be made by bank or draft, Postoffice or Express money orders on New York, payable to THE INDIA RUBBER PUBLISHING COMPANY. Remittances for foreign subscriptions should be sent by International Postal Order, payable as above.

DISCONTINUANCES: Yearly orders for subscriptions and advertising are regarded as permanent, and after the first twelve months they will be discontinued only at the request of the subscriber or advertiser. Bills are rendered promptly at the beginning of each period, and thereby our patrons have due notice of continuance.

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THE INDIA RUBBER PUBLISHING CO.

Entered at New York postoffice as mail matter of the second class.

TABLE OF CONTENTS ON LAST PAGE READING MATTER.**RUBBER GOODS NOT HIGH.**

MOST men believe that their own line of business is far less remunerative and presents more difficulties than any one of a dozen others which their neighbors follow. Thus, the maker of machine tools, for example, wishes he were a rubber manufacturer. He and nearly all others not engaged in rubber think it is a business of singular simplicity, free from minor troubles, and profitable beyond the ordinary industrial dream. Hence the general impression that rubber goods showing such great profits, are of course extravagantly high in price. A fragmentary knowledge of rubber compounding, of reclaimed rubber and its ilk, also fosters the belief that little real rubber is used in most goods. As for the last-mentioned heresy, it may be said that all of the crude rubber produced is used very promptly, and the purchaser gets quality and quantity when he pays a fair price for them.

In regard to large profits in any staple line of rubber work, that day has long since passed, as it is probable that a net profit of 6 per cent. on the world's business would be a reasonable estimate.

To those who, standing on the outside of the business, are figuring its big gains, should be given a lesson in manufacturing losses.

The constantly increasing price of the crude material, it will be admitted by all, necessarily increases the price of finished goods to a degree. But that is only the beginning. Once the rubber is purchased there comes into play the important item of shrinkage. This may be safely set down as 25 per cent. In other words, the purchaser of one pound of crude rubber actually receives only three-fourths of a pound, so that the market quotation, the foundation upon which the critic builds, is of no value at all. When he reads, "fine Pará \$3 a pound," he should read, as must the manufacturer, "fine Pará (less shrinkage) \$3.75 a pound,

Another fact that he is likely to be totally ignorant of, nor in this is any manufacturer likely to inform him, is the added cost that comes through damaged goods.

Factory damage is a bugbear to the whole industry, and is feared and guarded against on every side. There are, for instance, goods made up, but not vulcanized, that are defective and are "scrapped." This is not usually serious, as often the rubber can be reworked, with only a loss of a few cents a pound. When, however, goods are discovered to be worthless after being vulcanized the loss is very great. Then, a compound worth a dollar a pound before vulcanization may as scrap be worth only five cents a pound. In other words, there is an actual loss to the factory of 95 cents a pound, in addition to the labor and other expense.

A third type of loss from damage, and an infinitely troublesome one, occurs when goods that have passed all inspection and have been sent out as perfect, suddenly deteriorate from some hitherto unsuspected cause and are thrown back upon the manufacturer.

There might right here be added a fourth class—goods wilfully injured by purchasers after partial use, together with false claims for damage, both of which manufacturers are often obliged to shoulder for policy's sake.

It would not be fair to say that all suffer alike from damage, but it is perfectly true that all suffer. The history of the trade affords instances of capital loss and companies wrecked from the above causes alone.

Considering the fact that every known kind of rubber, nearly all of the plastics, all types of metallic oxides and earthy materials, and various oils and waxes, are used in rubber compounding, that they require special processes in manipulation and a great variety of heats in vulcanization, it is a marvel that the percentage of perfect goods is so uniformly high.

The damage danger is ever present, and those who congratulate themselves upon a period of freedom will do well to "knock wood," for it comes in the most mysterious of ways. For example, a maker of sheeted fabrics had thousands of yards of material thrown back upon his hands. The sheetings had left his factory apparently perfect. They came back in six weeks'

time, the rubber as rotten as blotting paper and possessed of a singularly offensive smell. A searching investigation finally located the trouble. A keg of gear grease had been shipped to the manufacturer in place of palm oil, and his compounder did not know the difference. Of course, this is an argument in favor of the necessity for a chemist; but that is another story.

Get any one of the old superintendents gossiping and his tales will be of hundreds of thousands of dollars' worth of goods scrapped, or perhaps burned up. And this is why in part, only in part, that rubber goods cost more than the outsider believes to be just or right.

THE ASKING OF QUESTIONS.

THE broad acceptance of the dogma that "Any fool can ask questions" is open to severe criticism, when it is remembered that investigation itself is only a quest. Certainly, any fool can ask and any other fool can answer foolish questions. Questions and answers follow parallels of comparative intelligence. The desire to penetrate the why of anything is the beginning of wisdom. Its presence in wise man or fool is to be commended, for it is education's most prolific germ. The whole development of the rubber industry, from the time of Good-year to the present, rests upon ceaseless questioning. The long mooted plan for an international school to inculcate the knowledge of rubber manufacture, excellent in theory, were it realized, would succeed in turning out a few real questioners. They would be of value to themselves and to the trade. The others who learn by rote, who accept statements without question, would swell the numbers of those who cherish secret compounds, use "phony" weights and false thermometers—high priests of compounding mysteries, that they themselves do not comprehend.

Thirty years ago, a certain rubber company essayed the then difficult feat of vulcanizing rubber to iron so that it would not strip off. The superintendent, a "mystery man," swabbed the metal surface with beef liver, and when it was bloody enough dried it thoroughly. Then he put the rubber on under pressure and vulcanized it. Sometimes it stuck and sometimes it did not. Did he ask himself or anyone why it succeeded or why it failed? Not he. It was a mystery, a fetish, a part of the worship of the ancient divinity Rule-of-Thumb.

He had an employé, however, who was forever asking "fool questions." This youth noticed that a spot of iron that was touched with blue vitriol presented a surface to which rubber adhered always and most tenaciously. He at once wanted to know why, and quizzed and questioned until he extracted the factory theory that "it cut away the grease and opened the pores of the iron." Not quite satisfied, he sought out a professor of chemistry in a neighboring town, learned about acids in general, about copper solutions in particular, about the union of

copper with sulphur in rubber during vulcanization, and evolved a perfectly sound, scientific process.

When the "Shoe Associates" controlled the rubber shoe industry of the United States, a compound, of which they made their goods, consisted of rubber, whiting, lampblack, litharge, barytes, lime, sulphur and tar. All except the rubber and tar were dumped into a great iron tank and thoroughly mixed together by means of a hoe in the hands of a husky dork. And the way the lampblack escaped and penetrated to every part of the factory can hardly be described. The resultant mixture, called "paint," was weighed out in six-pound batches for admixture with rubber. It was an awkward, unsatisfactory method, but Nathaniel Hayward, Leverett Candee and others of the pioneers evolved it, made it sacred, and no one presumed to question it. No one? On second thought there were two who mentally questioned both process and compound. One, a Connecticut Yankee, demanded of each ingredient what good purpose it served. All proved their value there with the exception of barytes and lime. Those two were eliminated and the goods became livelier and better. The other questioner, a Rhode Island Celt, wanted to know if the mixing mill could not do all of the amalgamating of the dry ingredients as they went into the rubber. The answer was "Yes," and the tank and the "paint" became ancient history.

Multiply the above questions and answers by a million and the world's progress in all lines of rubber, from forest to consumer, will be expressed. Moreover, the further expansion of the business, indeed its continuance, depends upon the constant questioning of managers, superintendents, chemists, planters, machinists and inventors. Nor is anyone barred. The field is free for all, and for those who question wisely and answer well greater rewards are in prospect than ever before in the history of the industry.

WHEN SYNTHETIC RUBBER IS A FACT.

IT IS the common thought that were synthetic rubber to become an accomplished fact not only would the inventor reap an enormous pecuniary reward, but rubber plantations would be abandoned and the gathering of wild rubber cease to be remunerative. It is more than probable that none of these things would happen. Our basis for this belief is a consideration of the camphor industry, which in many respects is similar to that of crude rubber production.

Camphor is, of course, a gum found in a forest tree growing in the Japanese island of Formosa. For years the trees were cut down and the chips steamed, the vapor being distilled by the crudest possible means. As the accessible forests of camphor trees disappeared under this work of destruction, the Japanese drove the bloodthirsty aborigines back, and opened up new tracts where the trees were found. Not only that, but they

planted some 12,000,000 trees, and planned to monopolize the business of camphor extraction. Incidentally, they advanced the price of the product to about double its former cost.

Attracted by the possible profit in camphor growing, the alert scientists at the head of the English, German and Italian agricultural developments began to experiment. They found that the trees would flourish in the Far East, in German Africa, in the West Indies and in Italy. They further learned that camphor could be extracted from the leaves without in any way injuring the tree.

Another set of scientists, however, had been at work on the synthesis of the gum, and some six years ago the feat was accomplished. Two years later there appeared upon the market synthetic camphor just as good in every respect as the natural product.

The synthetic gum, however, did only one thing. It brought the high monopolistic price down to its normal level, and will forever keep it there.

The wild camphor in Formosa will still be gathered, and will pay. The 12,000,000 trees planted there will in time produce profitably, and the plantations in the Far East, in Africa and in Italy will show good dividends. So it would be with synthetic rubber. It would sound the death-knell of any possible crude rubber monopoly and wonderfully steady prices. Rubber would still come from the Amazon, from the Congo; the great plantations in the Far East, in Africa and the rest of the tropical world, would still produce abundantly and profitably. Instead of dreading its advent, the world should desire it.

HIGH-PRICED RUBBER AND SOME OF ITS RESULTS.

WHEN rubber was fifty cents a pound, that is fine Pará rubber, and the valuable sorts were a drug on the market, it was used in many places where it was far from being a necessity. When, however, its price steadily climbed, manufacturers were obliged to use it where it was necessary and only in such proportions as were absolutely demanded. For certain goods, where a high degree of elasticity was demanded, the regular amount of rubber, no matter what the price, appeared. But where the qualities demanded were not a high degree of elasticity, but were simply plasticity, insulation, waterproofing, et cetera, it was found that many other plastics in conjunction with rubber could be used. They not only saved to the manufacturer thousands of pounds of high-priced gum, but gave to the consumer an equally good or better product at an appreciably lessened cost.

It came about, too, that the great quantities of unvulcanized cloth scrap, often burned up to get it out of the way or only used in a half-hearted sort of way, for something like anti-rattlers or rubber cuspidors were suddenly looked upon as valuable and reclaimed and used to advantage.

The story of the reclaiming of vulcanized scrap has been told so many times that its mention here is simply to point to one of the greatest economies brought about through the high price of crude rubber.

Take for example: the foot-wear trade. When rubber was low the goods were heavy and the compounds extravagantly rich. Driven to economy in the use of rubber lighter weights were produced, compounds revised and goods turned out that not only looked better, but gave longer service. Here, too, other rubbers besides fine Pará were found available and other plastics employed that notably increased both durability and waterproof quality.

In the line of mechanical rubber goods a book could be written covering applications of bastard gums of low-grade rubbers and of amalgamation of rubbers, that resulted in the long run in better goods.

Not only in the two great lines named, but in every part of the world's great industry the same necessity forced a like action on the part of manufacturers. This stress of circumstance obliged the maker of rubber goods to call to his assistance able chemists. It spurred tropical pioneers to send to the market scores of hitherto unused gums. It educated manufacturers so that the least of them today knows infinitely more about the rubber business than did the greatest thirty years ago.

It has often been remarked that Charles Goodyear forecasted nearly everything that would be made in rubber, and it is true. Were he alive today, his knowledge of crude rubber and of compounding would not be sufficient to secure him a position as superintendent of the smallest factory in existence making the simplest line of goods.

It is not intended to convey here the thought that high-priced rubber is a blessing. It has resulted in good, because of the versatility and capability of the men engaged in the trade, together with the numberless "assistants" that nature supplies to the compounder. It would seem, however, as if the end of nature's resources and of man's ingenuity has been very nearly reached. If such is ever the case the result of abnormally high rubber would be a disappearance from the market of rubber goods in the direct ratio of their necessity to humanity.

TRAVEL AND EXPORT TRADE.

THOSE who in the past claimed to have the best interests of the United States at heart were forever lamenting the failure to open up foreign markets for our products. Nothing was left unsaid that could be said. Tons of export sermons, good and bad, were scattered broadcast, but the great mass of American manufacturers hustled right along supplying the home market and doing well at that. The English, German and Belgians, however, built up big businesses in countries other than their own. It is interesting to note that the beginnings of the foreign trade of the three peoples, named were when the business men thereof began to travel. Not from mass meetings, associations nor tracts came the impulse, but because they went in person, saw the needs and instantly wished to supply them.

Today any British sea captain will tell you that in the last half a dozen years a fourth has been added to the three classes of globe trotters he has known—the traveling American. Not the traveling salesman, but the manufacturer who takes his vacation in winter in the West Indies, in South America, or in the Pacific; or his summer relaxation in northern Europe, China or Japan. He goes for rest, but comes back full of new ideas, greatly broadened views and with a desire to have his share of the world's trade.

It is to this fact that the growth of the American export trade should and will be attributed, and as would be expected the traveling business man is just as often engaged in the rubber business as in any other.

MANUFACTURING EFFICIENCY.

IN the last five years there have come into being, semi-professional gentlemen known as "production engineers," whose especial field of effort has been the great manufacturing establishments of the world. One of their particular aims has been to simplify work—or more explicitly to minimize motions. As the machinist corrects "lost motion," so they eliminate waste motions. The vaudeville sketch artist who recites "She opened her bag, took out her purse; shut her bag," etc., caricatures waste motion so that none can fail to see it. Where it occurs in industrial life, however, it is often far from apparent. Many of the most rapid workers make thousands of minor false motions in the course of eight hours, a loss of effort that is not detected either by the worker or the ordinary observer. It is here that the trained simplifier is valuable. His method of procedure is to study one phase of the work at a time. Possibly he observes 10 men, each of whom do exactly the same kind of work under like conditions. He finds perhaps that No. 3 makes the most motions; No. 7, the fewest. The average of the 10 is fair, but that does not satisfy. Taking No. 7 as a basis, the analyst goes over the work mentally again and again until he is able to cut out quite a number of false motions. Then one man is trained to do the work, making every or nearly every move count. His production, or very nearly that, is made a standard, and soon all doing that sort of work are able to equal it and with less wear and tear than before.

The efficiency problems are by no means confined to hand work. They apply to arrangement of rooms, of machines, speeds, heats, correlations of departments, inspection of product before vulcanization, to everything from coal passer to president, and the savings effected are prodigious.

FOR A GREAT MANY YEARS rubber manufacturing companies in the United States specialized along certain lines. Companies that made shoes did nothing in sundries, hard rubber, mechanical goods or any of the other rubber products. There were those who argued that by thus specializing they were able to produce a better product at less cost than if they made everything or nearly everything in rubber. Many large companies were very proud that they knew nothing of anything except their own specialty. Today, however, the spirit of progress or expansion seems to lead away from specialization. Companies that begin with one line as tires, for example, after a time add a complete line of mechanical goods. Later they create another unit for the production of insulated wire; still later they add rubber shoes. So that today the larger American rubber factories resemble in their variety of product the great European factories that make nearly everything in rubber and gutta percha.

If you are interested in the manufacture of rubber goods of any description, you will find valuable information and useful trade hints in Mr. Pearson's "Crude Rubber and Compounding Ingredients." An index of its contents will be sent you free on request.

SELF DEFENSE SAMPLES.

RUBBER manufacturers are periodically and semi-periodically subject to the visits of those who are interested in new substitutes for rubber. Usually the visitors are honest in their belief in the extreme value of the discovery they are showing, and it is almost impossible to explain to them the absurdity of their claims. The basis of their faith is usually a small sample of good quality product, made up of, say, 50 per cent. of Pará rubber and 50 per cent. of their material, and enough sulphur to cure it. Sometimes they show with pride a section of a tire made of the compound that has run one, two or three thousand miles. The courteous manufacturer spends hours in a vain attempt to enlighten the other as to the absolute valuelessness of his product, and fails. Later he hears of fancy prices quoted for the foreign rights, of a home company, in which are no rubber men, who are secretly erecting a factory, and then an eloquent silence.

What is needed is a line of self-defense samples to off-set those of the substitute finder and to enlighten him. They may be easily prepared.

Take, for example, 50 per cent. of finely sifted road dust with an equal quantity of Pará rubber, with sulphur sufficient to vulcanize. Then when the substitute man shows his sample the manufacturer can match it. He may even have prepared tests as to wear, resiliency, etc., and will have little arguing or explaining if his visitor is honest, for nine times out of ten the manufacturer's sample will be the best. Coal ashes, powdered brick, anything common and dry may be used, and the illustration will be just as illuminating.

INDIA-RUBBER GOODS IN COMMERCE.

EXPORTS FROM THE UNITED STATES.

OFFICIAL statement of values of exports of manufactures of india-rubber and gutta-percha for the month of January, 1911, and for the first seven months of five fiscal years, beginning July 1:

MONTHS.	Belting, Packing, and Hose.	Boots and Shoes.	All Other Rubber.	TOTAL.
January, 1911	\$169,351	\$76,694	\$475,254	\$721,299
July-December	1,045,783	1,523,347	2,922,464	5,491,594
Total, 1910-11	\$1,215,134	\$1,600,041	\$3,397,718	\$6,212,893
Total, 1909-10	1,096,459	1,371,199	2,739,953	5,207,611
Total, 1908-09	803,067	958,671	2,088,524	3,850,262
Total, 1907-08	844,811	1,252,153	2,209,938	4,306,902
Total, 1906-07	691,286	858,714	2,040,592	3,590,592

The above heading "All Other Rubber," for the last seven months, includes the following details relating to Tires:

MONTHS.	For Automobiles.	All Other.	TOTAL.
July, 1910	\$146,080	\$56,096	\$202,176
August	151,468	71,486	222,954
September	133,735	39,457	173,192
October	103,788	33,469	137,257
November	160,214	37,962	198,176
December	144,645	47,325	191,970
January, 1911	175,743	33,227	208,970
Total	\$1,015,673	\$319,022	\$1,334,695

AN article on the Acre territory in the *Bulletin* of the Pan American Union (Washington: January, 1911) states that the rubber tree—*Hevea*—selected for tapping in that region are usually from 30 to 40 years of age, and are expected to yield for twenty years, after which they become useless. An interesting point bearing upon the development of the Acre is the statement that there are already about 25,000 Europeans, Brazilians, and Asiatics in the territory. While not so stated, it is probable that these new settlers have come mostly from Brazil.

India-Rubber in Dutch Guiana.

By the Editor of "The India Rubber World"

FOURTH LETTER

By Launch to La Liberté.—Bananas and "Hevea."—A Plantation with Water Roads.—A Launch Trip Up the Para River.—Plantation of Crocodiles.—Pole Bridges.—Waterland.—Voorburg.—Coolie Drawn Punts.—Up the Com-mowynne.—Katwyk.—A Peep at Pisterzorg.—Javanese Coolies.—A Coolie Festival.

ONE of our morning trips was to a large cocoa plantation, La Liberté, owned by the Balata Man, to see his plantings of Pará rubber.

The little steam launch *Ellen*, moored to the slippery tide-washed steps of the Club House *stelling*, was our meeting-place soon after early coffee. Then, as she chugged up-stream against the outgoing tide, we had breakfast on the little awning-covered quarterdeck. The plantation was about an hour up the Suriname, and had a substantial landing pier, down which a flight of steep wooden steps ran into and under the water, the last three or four steps being always coated with river slime. This plantation had once been a great sugar estate, the grinding being done by a tide mill. The present owner had bought it for coffee, and that not being profitable enough he had turned to cocoa. A most productive and beautiful estate was the result, until suddenly the dreaded witch-broom made its appearance. When the cocoa tree throws out green shoots of three or four times their normal diameter, adorned with abundant leaves twice as big and twice as glossy as the rest of the tree bears, that is the witch-broom. It sucks the vitality from the trees until it stops fruiting. The disease is said to have had its beginning in the Guianas and has spread like wildfire and done incredible damage. By pruning and spraying it can be cured, but the

menace of its presence is turning more than one cocoa estate into a rubber plantation. Our host, like a true fighting Dutchman, had no thought of abandoning his profitable cocoa, but was curbing the pest with one hand and planting rubber with the other. He was also planting bananas, as the ubiquitous fruit company have a long time contract for many thousands of

bunches from this territory, and every Dutch boat going north carries its quota. The bananas were interplanted with young *Hevea*, drawn from a nursery of 25,000 trees that had some time before been established on the estate. It seemed odd, but the seeds for the planting came from far away Ceylon. One would imagine that Guiana's near neighbor, Brazil, with *Hevea* seeds rotting on the ground by the hundred thousand, would be the natural source of supply, but such is not the case, and seed shipments of from 20,000 to 1,000,000 are constantly made from the Far East. They cost about a cent apiece on arrival, and sometimes 5 per cent. of them germinate and sometimes 95 per cent. That depends upon care in gathering and storing, in packing, and in a measure on the season of the year in which they take their journey. It is affirmed by planters that seeds that come by way of England in the cold weather suffer most.

There were two systems of canals on this estate—the drainage canal with flood-gates housed under trim brick porticos standing sentinel along the river bank; and a wide traffic canal that divided the plantation in half, together with several lengthy laterals, giving easy access to all parts of the estate.



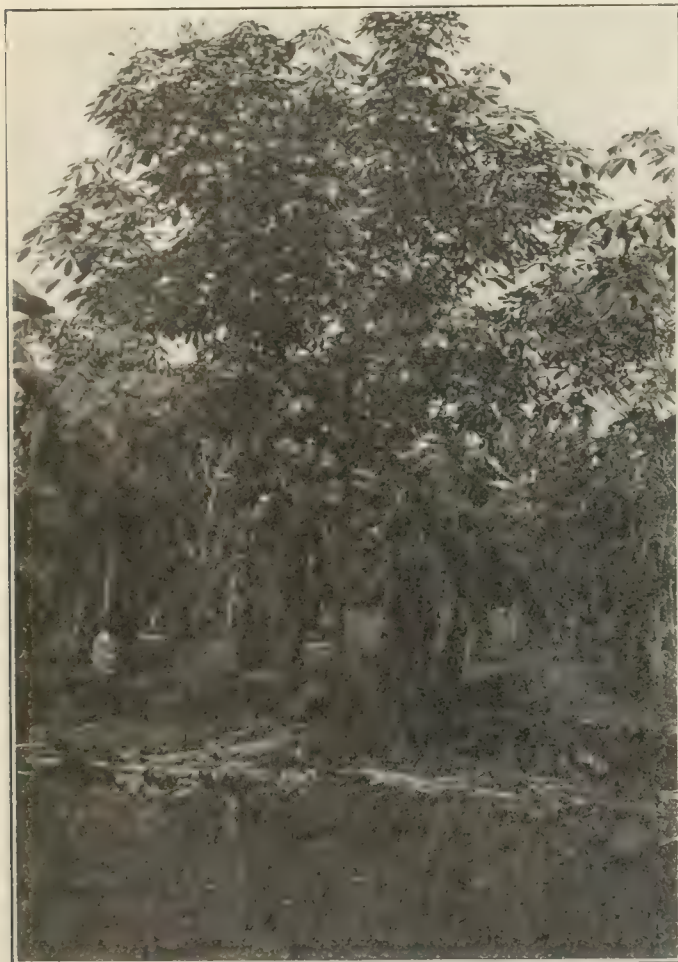
SIX YEAR OLD HEVEA TREES

After walking through the cocoa, we entered a long punt, paddled by a pair of muscular Chinamen, and did the whole plantation by water. It was very beautiful thus passing through the cocoa groves, from the midst of which grew the lofty dadap trees, thence into and through a belt of uncleared forest, somber, cool, a tangle of tree trunks and bush rope, the whole decorated with strange flowers, huge fleshy leaves and fast clinging orchids.

I forgot to say that our party was reinforced by the manager of the estate, the Assistant Agronom and two friendly fox terriers, that trotted along the banks, swam the canal back and forth, and hunted lizards between whiles with great enthusiasm. From the forest ride we emerged into a great clearing given up to bananas and rubber. I don't know much about bananas, so

This special planting of bananas and rubber amounted to about 2,800 acres, the rubber trees being planted 100 trees to the acre, and it took long to look it over thoroughly. We got home just at dark and promised to be ready for an early start on the morrow for the Para river.

The dwellers of the beautiful rubber city that dominates the mouth of the Amazon no doubt believe that the word Para is exclusively their own. It may come to them as a shock, however, to know that there empties into the Suriname river a genuine tropical stream that bears the name of Para. It is in many ways a miniature Amazon, with highwater marks far up on the tree trunks, masses of floating vegetation borne along by the current, with floating trees and logs that had to be dodged or dislodged; it was very like the Mightiest of Rivers. Then, too,



THREE YEAR OLD "HEVEA" WITH BANANAS.



FOUR YEAR OLD "HEVEA" TREES.

the discussions concerning the Suriname disease, a swelling and rotting of the tissues, a sort of vegetable *elephantiasis*, or the Panama disease, a leaf blight, did not vitally interest me. I am glad to know, nevertheless, that the new Congo variety of banana, which is being introduced, seems to be immune to both of the plant sicknesses just mentioned.

The *Heveas*, which were about a year old, looked very well. The soil in which they grew is said to be about 60 per cent. clay and 40 per cent. fine sand. It is really Amazonian mud and holds the moisture wonderfully. The drains between the dykes were from five to six feet deep, so that during the rainy season the trees have at least four feet in which to grow without getting their feet wet. Apropos of this the Government Official spoke of eight year old *Heveas* on drained and undrained land. Both grew very well, but while the trees on the undrained land were 20 inches in circumference those on drained land were 30.

the tree growths of palm, silk cotton, and the variety of hard woods with their small leaves and mighty branches, with the ever present and luxurious monkey vine, binding the trees so firmly together than no forest monarch could fall without pulling down many lusty neighbors. The one touch of Amazonian similitude most common, however, was the rankly growing "mocca-mocca," with its huge arrow-headed leaves pointed straight upward, filling every muddy shallow and crowding as far out into the stream as the swift water would permit. Around many curves, under leaning tree trunks, through masses of drift, by little cocoa and banana plantations, we pushed on upstream until we reached the mouth of the great canal that joins this river with the Suriname some miles above its mouth. We turned and steamed through this canal out into the muddy waters of the Suriname, past the Leper colony and across to the Accarico (Crocodile) plantation.

We received a hearty welcome from the manager, a tall, athletic, striking looking young man, who was accompanied by two huge and friendly deer hounds. This plantation, so said the Government Official, had considerable good rubber, and we started out to find it, but almost at the outset met with a temporary check. Between us and the rubber field yawned a ditch some fifteen feet deep, with a little water and considerable mud in the bottom. It was bridged by a square log about twenty feet long and six inches wide, across which our guide, his dogs and coolies paced as calmly as if it were Brooklyn bridge. The Balata Lady pluckily faced it and would have walked across, although in fear and trembling, but the Balata Man would not allow it and bade us go on and not wait for them. While we tarried for a moment, the manager produced two long poles, which were hastily stuck down into the mud by the side of the bridge, then placing a coolie on the bank at each end, who held another long bamboo pole for a balustrade, we all crossed in safety. In reality, this balustrade would not have saved one from falling in the slightest degree. It was simply the moral effect of its presence there that enabled the dizzy ones to walk safely and straightly.

Here we saw some splendid rubber, *Hevea* 2¼ years old. There were some 1,200 acres of it, planted 100 to the acre, in distinctly clayey soil, which was, however, well drained. In addition to this, in another direction, were some 6,000 seedlings, that appeared to be six months to a year old and which looked very healthy.

Quite near here is the Waterland estate, already mentioned as having the oldest *Hevea* trees in the colony. They are only eight in number, and are used as seed producers, and while we were there were producing at the rate of 1,500 seeds a week, all of which found ready sale.

The plantation of Voorburg lies down the river from Paramaribo, and, like most of the great plantations, must be approached from the water. We journeyed to it in the *Helena*, a little steam launch named after the Balata Man's wife. This estate, an old one with some 1,500 acres under cultivation, was years ago a great sugar producer. To-day it grows coffee and cocoa, and if it fulfils its promise will soon be a notable rubber producer. The place was beautifully administered, and after examining the factory where the coffee and cocoa were prepared for market, we found a conveyance awaiting us for an examination of the plantation itself.



CANAL THROUGH "LA LIBERTE."



TYPICAL PLANTATION MANAGER'S HOUSE.

Only one who has ridden neurasthenic tropical horses or opinionated mules over plantation trails can appreciate the luxury of a state inspection in a roomy punt drawn by a slowly moving coolie who pads along the towpath mile after mile. The canals were very wide and the water clear and wholesome. In them were many leaping fish, an occasional alligator, and the four eyed surface swimming fish that is one of the curiosities of the lower Amazon. We passed through the carefully tended cocoa and coffee plantings to quite an extensive field of two year old *Heveas*, interplanted with bananas. Then we went to the older planting, which consisted of 20,000 trees. These were planted 10 x 10, and were very healthy and strong, and for a guess would run from four to six inches in diameter three feet from the ground. The soil in which they grew had been used to produce sugar, then coffee, then cocoa. The drains that lay about five feet below the surface were so dry that one could walk in most of them without dampening the shoe soles. In spite of this, the surface soil on the tops of the dykes which had been exposed to the tropical sunlight for a month without a single shower when turned up with the point of an umbrella was gratifyingly moist.

The trees were planted from stumps, some of which were two years old before being cut back, but they grew just the same. Close by was a thrifty planting of *Funtumia*, by far the most beautiful of any of the rubber producers.

From Voorburg we went down the Suriname until in full sight of the sea, then up the Commeowynne by huge sugar estates with their little settlements clustered along the river banks, passing an occasional fruit barge, steered by coolies with huge sweeps, who anchored when the tide was against them and ate and slept, then when the tide turned used it instead of motive power to take them to their destination. There were other craft, to be sure, dugouts, sailing canoes, tent boats, and an occasional steam launch, but the river was fairly free of traffic and the big blue cranes and snow white egrets flapped slowly out of the way, as much at home and almost as fearless as they were when settlements were unknown. Dinner time came as we were still steaming up the river and we enjoyed a substantial repast. The meal was scarcely finished when the anchor was dropped off Katwyk. It was low tide and the tender took us to the landing steps.

The plantation named was not our objective, which was Wederzorg, an old and beautifully kept place that had been under cultivation for 50 years. The manager was absent in Europe, but his assistant willingly showed us the rubber, of which he had plantings of all ages from six months to four years. He had, for example, some 650 acres planted from one year old seedlings, the trees themselves being now four years old. They looked fairly well, but were beginning to show



LANDING AT "CROCODILE" PLANTATION.



"HEVEA" RUBBER AT "CROCODILE" PLANTATION.

slight signs of suffering from the drought. (As the rains began three days after our visit, it is doubtful if they were seriously injured). The trees were planted without any shade and many of them from slips from older trees. These did not show the vigor or good growth that was apparent in the seedlings. At the time of our visit the manager was interplanting coffee with the whole of this *Hevea* growth. Another field that was shown on this estate was an interplanting of bananas and *Hevea*. Both looked well, the young *Hevea* showing vigorous growth and the banana trees being the largest we had ever seen. The manager complained, however, that they were not bearing fruit, a very serious calamity, and one for which he could find no apparent cause.

On this estate as well as on most of the others the canals and waterways were clean and sweet. Of course, where vegetation is so abundant they become choked with sediment and vegetable

growths, but about once in two years they are drained nearly dry, closed at each end and gangs of coolies set to work shoveling the accumulation out.

It was late in the afternoon when we reached Pieterzorg. Here we had time only to examine the seed beds, where were growing some 3,000 *Hevea* seedlings that as soon as the rains began were to be set out on the plantation proper. We wanted to stop and look over the plantation, the old fashioned garden, the quaint manager's house, and substantial looking laborers' quarters, but night was falling, we were far from home and tea was ready on the launch, so we re-embarked and headed for the city.

To the American mind labor in Dutch Guiana is very abundant and very cheap. On the latter point the British planter in the far east is not by any means in agreement. His labor costs him something like fifteen cents a day, whereas the same labor



"HEVEA" 2½ YEARS OLD.
[Interplanted with bananas.]



"HEVEA" FIVE YEARS OLD.
[Interplanted with Cacao, Shaded by Dadap Trees.]



STEAM LAUNCH AT PLANTATION LANDING.

in Dutch Guiana costs 40 cents a day. This is, of course, the coolie labor, English and Javanese, brought here under the indenture system from India and Java. The English or Tamil coolies are brought in under the familiar five year indenture contract and make excellent workers, many of them remaining at the expiry of their contract as permanent settlers. They are industrious, saving, and become in a small way property owners in a short time. They live simply, contented with rice and cassava, never abandoning their native dress of turban, tunic, and loin cloth, regularly spattering the white of the tunic with magenta stain during festival seasons. Their women wear the heavy silver bracelets, anklets, and gold nose rings just as they do at home. They are wonderfully polite and their dignified *Salaam, Sahib* is very grateful as contrasted with the often stupid stare of the negro who has grown up on the soil.

The Javanese coolies are also very polite, invariably greeting the stranger with the soft intonation that makes the coolie speech so grateful to the ear, their greeting being *Taba Tuan*. They

are not, however, so desirable either as laborers or colonists as the Tamils. They are perhaps brighter and more active, but have no care for the morrow. The best of them will spend their weekly wage for one meal and then live on scraps and stolen bananas until the next pay day comes around. They are fiercely jealous, and when a neighbor, either black or white, steals one of their women, are quite likely to kill him. These summary vengeance are often accomplished before the crowd of stolid coolies, who not only will not lift a hand to interfere, but who display a lack of memory on the witness stand that would make an American Sugar Trust official green with envy. Aside from this they are very law abiding and the most willing and courteous people in the world. Their indenture system is about the same as that under which the Tamil coolies are employed.

Close by the city and jutting out into the river is the fine pier of the Balata Co., where there is 26 feet of water at low tide. Back of it are warehouses for balata and supplies and a little further upstream a miniature shipyard, where the company build their own boats for the river traffic of the interior. To this pier we came one evening, accompanied by the Balata Man and his wife and a high government official and his wife, to view a Javanese coolie festival. The giver of the feast had secured a great warehouse, reserved a space for the orchestra and dancers, and filled the rest of the space with long tables upon which were displayed viands most esteemed by the Javanese. The feast giver also collected from each guest enough money to pay for what he consumed in meat and drink, with a good margin of profit for himself. I believe the charge was about 5 guilders per plate, or two American dollars.

We arrived in the midst of the feasting. Men only were seated at the tables; the women and children squatted on the ground behind the orchestra and watched the proceedings with



COOLIE QUARTERS ON A TYPICAL DUTCH GUIANA PLANTATION.

awe and approval. The orchestra consisted of a tom-tom, a triangle, and a sort of a metallic xylophone. We were received most respectfully, chairs being brought in and a special dance being arranged for us. The dancing girl, who in the native eyes was a great beauty and a wonderful dancer, sat near us chewing betelnut and expectorating as profusely as any tobacco chewing American. Her dance consisted of a slow rhythmic walk intermingled with languid postures and graceful movements of



POLE BRIDGE ON PLANTATION.

the hands and arms. The one interesting thing about her was the accentuated expression of immobile haughtiness without which no Javanese *danseuse* can be considered beautiful. There was also an absurd little Javanese clown, dressed to imitate the Javanese idea of a Scotch highlander, whose antics provoked shrieks of laughter from the women and children.

At intervals between the dances a sash rolled in the form of a turban was presented to each visitor for drink money. After



MAIN CANAL, VOORBURG.

the clown and the ballet dancer, whom our host called the "Balata Dancer," had finished, the giver of the Fetish treated us to cigars and invited us to remain until the festival was over. As this would mean a matter of three days' stay in the balata sheds, we were compelled to decline. Instead we went out on the pier, where it was cool, and were served a most delightful after theater supper.

[TO BE CONTINUED.]

AUTOMOBILE TIRES FOR THE TROPICS.

IF any manufacturer of automobile tires will erect in his factory yard a small house, steam-heated, so that the temperature may be kept at about 90 degs. Fahr. during the day and 70 degs. through the night; if he will further see that the confined air in the building is kept moist almost to saturation; if he will provide windows so that the midday sun may raise the temperature say to 150 degs., and its light search every part of the interior, he will have a very fair imitation of the climatic condition his tires endure in the tropics.

His testing machines set up in such a room will develop startling facts. Perhaps the first to be noted will be that wherever rubber in solution has been used, it will soften and "let go" no matter how complete the vulcanization. Treads that are tough in the temperate zone are apt to get waxy and soft in the torrid; fabrics thought to be moisture proof, mildew and rot. All of which argues the need for a special tire for the tropics.

It would also seem to be worth while, for the market is a promising one. England, with her thousands of miles of fine roads in Ceylon, India, the Federated Malay States, Jamaica, Barbados, etc., not to speak of the German, French and Belgian tropical possessions, together with the large Central and South American cities, make a market for automobiles that is rapidly being exploited—one that calls for an increasingly large number of tires.

"NEAR" RUBBER FROM THE SOYA BEAN.

REFERENCE is made elsewhere in the columns of this paper to a recently granted German patent on a process for the manufacture, from the soya bean, of a substitute to take the place of rubber.

Considering the high price that consumers are willing to pay for the raw product, compared with the cost of its production, and the constantly increasing—practically unlimited—demand for rubber for a thousand and one purposes, it must be admitted that the field is an alluring one. That a fortune awaits the inventor of any substitute for india-rubber that can be produced at anything like reasonable cost and from a material so cheap and easily obtainable as the soya bean, for instance, is taking a very conservative view of the situation. When we consider that the price of the raw rubber our manufacturers use in such vast quantities constantly dallies around two dollars per pound, it will be evident that there is a wide margin for profit above any likely cost of production and if we can subtract raw material for our rubber factories, even from a staple article of Oriental diet like the soya bean, there will be money enough in the undertaking to furnish the Mongolian population with a more toothsome and no less nutritious substitute for a food product that is relegated, in the Western world, to the rank of a source of vegetable oil and a cattle feed.

GERMAN BALATA BELTING FOR THE UNITED STATES.

In a recent report, the United States consul general at Dillingham, Coburg, Germany, states that during the last fiscal year, there was an increase, amounting to 32 per cent. in the shipments of balata belting from his district to the United States, all of which were made by one factory in Thuringia. These shipments, the consul remarks, will probably cease entirely in the course of the present year because a factory is being erected in the United States by this same Thurnigian firm, for the manufacture there of balata belting; the machinery for it has already been shipped to America. The consul quotes the value of the balata belting shipped to the United States from his consular district, during 1910, as \$115,747, compared with \$87,585 in 1909.

SEND for Index (free) to Mr. Pearson's "Crude Rubber and Compounding Ingredients."

The India-Rubber Trade in Great Britain.

By Our Regular Correspondent.

IT was with much regret that I read in the February issue of THE INDIA RUBBER WORLD the brief notification of the decease of Mr. Hawthorne Hill. I only had the pleasure of meeting Mr. Hill once and that was about eleven or twelve years ago when he paid a visit to England. It was

THE LATE
ASSOCIATE EDITOR.

soon after my association with THE INDIA RUBBER WORLD began, and though we did not meet again, we have corresponded on many occasions and I feel the loss to be that of an intimate friend rather than of a chance acquaintance. To British readers, except those who have paid visits to the United States in the last decade and found time to call at the offices of THE INDIA RUBBER WORLD, Mr. Hill's personality will be unfamiliar, though of course this does not apply to his name. Doubtless an appreciation of his journalistic work in connection with THE INDIA RUBBER WORLD will come from the editorial pen and I shall therefore not dwell on the subject beyond these few general remarks.

A PARAGRAPH has been going round the press to the effect that artificial rubber has been made from soya bean oil by a

SOYA BEAN OIL.

patented process. I have no doubt that the product is merely a variation of the ordinary oil substitute, as made from other vegetable oils, though in the new patent the procedure differs considerably from the time-honored chloride of sulphur process or from the heating with sulphur process. Of late years the soya bean, grown so largely in Manchuria, has become of great commercial importance, hundreds of thousands of tons being sent to Japan, and in the last few years to Europe, for the production of the oil which is largely used for edible purposes, the oil cake being used for cattle feed. The scarcity and high price of cotton seed oil made the advent of the soya bean in England doubly welcome. The beans yield 18 per cent. of oil and from the fact that it has replaced cotton oil in the soap manufacture, I have no doubt that the substitute makers know all about it, as both require glycerides of the fatty acids.

THE Gorton Rubber Company, Limited, made a public issue on February 27 to March 2 of £30,000 5 per cent. first mortgage

THE GORTON RUBBER
COMPANY, LIMITED.

debentures in 300 debentures of £100 each, being part of an authorized issue of £40,000. The debentures are repayable on December 31, 1927, at par, but the company reserves the right to redeem the whole or a part at any previous time at 105 per cent.

The present capital of the limited company formed in 1899 is £62,500 and the proceeds of the new issue will be devoted to extending the company's operations and to paying off an existing mortgage of £8,000. The dividends paid have been of a progressive nature, last year's being 10 per cent., and it is now proposed to manufacture other rubber goods in addition to the kinds at present being turned out.

Mr. G. H. Cortland is the chairman and the other directors are F. Walmsley, J. P., E. L. Curbishley and George Spencer. The chairman is a Worcestershire man, while Mr. Curbishley, the man on the spot, was formerly connected with the Capon, Heaton & Company, Limited, coming to Manchester with the late Mr. Harry Heaton, Jr., when the latter took over the works some ten years ago. A change has recently been made in the works' management. Mr. Saunders having left to commence manufacturing on his own account. It has already been mentioned in this correspondence that the Gorton Rubber Company, Limited, are now in possession of the Droylsden Rubber Works, formerly T. Worth & Company. Mr. George Spencer, to whose

initiative and energy much of the recent progress is due, was for many years connected with the tire sales' department of Charles Macintosh & Company, Limited.

MANCHESTER
MOTOR SHOW.

THE North of England Motor Show was held at the new exhibition buildings, Rusholme, Manchester, February 17-25, being opened by the Earl of Derby, who, I may say, is by birth, residence and interests a Lancashire man. The present building is far more commodious than any of those in which shows have been held in former years and is situated in much pleasanter surroundings, though it remains to be seen whether the distance from the center of the city will not adversely affect the attendance of the business man in the day time. The show was said to be the largest yet held outside Olympia, London. Further than this, with regard to its general features I shall not go but shall limit my remarks to the tire exhibits. Of new comers to the local show I noted the exhibits of George Spencer & Company, Limited, Almagam, Limited, and Wood-Milne, Limited, whose new tire works at Leyland are approaching completion. The main feature of the new Wood-Milne tire is the tread of steel-rubber. The steel is mixed in the form of extremely fine hairs with the rubber and forms a flint-proof tread with a non-skidding surface, the use of studs not being necessitated.

The Almagam tires, which are made at Harpenden, are made of a rubber compound prepared by a special process by which the rubber is considerably strengthened. The special material used for converting weak rubber into strong is made in the laboratory and sent down into the works ready for use. A considerable and growing business is being done in these tires and a depot is shortly to be opened in Deansgate, Manchester. A feature of the Almagam tire tread is that the studs are galvanized and have an aperture in the center through which the rubber protrudes slightly. The Polack Tyre Company had an exhibit of their well-known tires which were also to be seen in the stand of Leo Swain, their North of England agent. This company is now putting up works at Shepherds Bush, London, where the complete tire will be made up and a repairing business carried on. One of the novelties at the show was a tourist car fitted with the double tire rim made by the Blackwell Rim Co., of Stourbridge. The double rim consists of the ordinary pneumatic tire and in addition an auxiliary solid tire about 1½ inches diameter fixed alongside, but which is out of touch with the ground surface so long as the pneumatic tire is in action. When a puncture occurs the auxiliary solid tire automatically comes into use and no stop whatever is necessary.

The Kempshall Tyre Co., of Europe, Limited, has a good exhibit of their well-established tires, including the anti-skid, the grooved tire and the combined steel and rubber studded tires.

One of the most important tire exhibits was that of Charles Macintosh & Co., Limited. A novelty shown was the Macintosh patent fiber tread non-skid tire, in which the shedding of steel studs is practically eliminated by the use of the patent fiber tread in which the studs are embedded. This enables the cover to be worn to its fullest extent without losing its non-skidding qualities. It is reported that this type of cover has, after prolonged tests, been adopted by several of the largest users of motor tires in this country. Other tires shown were the Macintosh grooved motor tire, the Macintosh ribbed motor tire and the Macintosh plain motor tire. The new tire protector brought out by the firm last year has, it is stated, been further improved and is being increasingly adopted by motorists who wish to reduce their expenditure on tires.

Some Rubber Interests in Europe.

FRANCE.

THE Compagnie Francaise de Caoutchouc is the title of a new company established in Paris, France. The corporation will be capitalized at 1,200,000 francs [= \$228,000], and will engage in the production of rubber from the latex, according to the Poulverel process.

The headquarters of the Société des Roues Pneumatiques Partington have been removed from 43 Rue de Richelieu, Paris, to 2 Rue Chateau, Neuilly on Seine. J. de Montignon has been appointed sole manager.

The establishment is announced, at Nevers, France, of the Société anonyme des Caoutchouc Comprimés. The new company, which will engage in the manufacture of rubber goods on the Epinat process, will have a capital of 70,000 francs [= \$13,300], and offices at 4 Fauborg de Lyons.

GERMANY.

UNDER the style of Julius Roempler Akt. Ges., the rubber works of Julius Roempler, Albion Bendorf and a branch of Wilhelm Julius Teufel, all of Zeulenroda, Germany, have been amalgamated. They will form a joint stock company, with the above title and a capital of 2,000,000 marks [= \$476,000], and engage in the manufacture of rubber goods.

The Continental Caoutchouc and Gutta-Percha Co. has been organized at Hanover to conduct, on a large scale, the manufacture of raincoats, automobile and sporting clothes, using waterproof rubber fabrics.

Bruno Felgner, business manager of the Lothringer Gummiwerke, G. m. b. H., of Metz, has resigned. The merchant, Josef Sailliet, has been elected to the position.

The firm of Dr. Ernst Kuhlmann, G. m. b. H. (Berlin), has been registered, the capital being quoted at 55,000 marks [= \$13,090]. The managers are Dr. Ernst Kuhlmann, apothecary, and merchant Wilhelm Roescheisen, Berlin. The firm proposes to manufacture special bandage fabric and deal in materials and appliances for the manufacture of bandage fabrics.

The rubber goods business of J. C. Schmidt (Nuremberg, Bavaria), has been acquired with the right to continue it by merchant Fritz Lachmund, who will carry it on under the title of J. C. Schmidt, Successor.

Jenatzy Pneumatik and Auto Accessories Dealers, m. b. H., Dessauerstrasse 1, Berlin. To carry on the business as vendors of the productions of the Manufacture Générale de Caoutchouc C. Jenatzy-Leleux, Brussels, and of auto accessories of other makers. Capital stock 20,000 marks. [= \$4,760.]

The firm of L. Schetter & Co., Ltd., have commenced business at Cologne as dealers in old rubber, reclaimed rubber, gutta percha, etc., with headquarters at Gereonshaus 97/8. L. Schetter has been appointed manager of the new firm.

A GOOD YEAR'S BUSINESS.

Mitteldeutsche Gummiwaren Fabrik Louis Peter Aktiengesellschaft, Frankfurt-on-the-Main. Reporting on the sixth business year, 1909-1910, this company says: The past year, in consequence of the excessive fluctuations in the crude rubber market, must be considered abnormal. While the increase in the cost of crude rubber, as compared with the preceding year, was so considerable, the selling prices increased but slightly. Commercial councillor Peter purchased considerable quantities of crude rubber, of a new variety, under the impression that the material was available for the company's purposes. When it was found that it could not be used, he personally assumed the entire loss, which amounted to 1,807,731 marks, so that no loss was suffered by the company. The increase in capital stock of 2,000,000 marks [= \$476,000], authorized by the last gen-

eral meeting, was confirmed. This will provide the company with a large balance and enable it to wipe out the bank debt. A dividend of 25 per cent. was authorized, on the entire stock.

A NEW COMPANY IN HAMBURG.

Gummi Industrie Werke, m. b. h., Hamburg, has been registered in that city. The headquarters of the concern will be in Hamburg. The purpose of the organization is the recovery of used rubber, the sale of such manufactures and their by-products, trade in rubber and rubber goods of all descriptions and their perfection, the acquisition, testing and exploitation of patents and processes of all kinds as well as participation in other, similar undertakings. The capital stock is 800,000 marks, Leopold Ferdinand Friedrich Wilop, merchant of Hamburg I is the business manager.

RUSSIA.

A JOINT stock company has been organized in St. Petersburg, Russia, with a capital of 500,000 roubles [= \$257,500], (1,000 shares at 500 roubles each) to conduct and extend the rubber boot and shoe works in that city of N. A. Stoljaton & Sons and their leather factory in the village of Kineschma.

Ernst Schubert has been elected a director of the Russian-American India Rubber Co., Treügolnik, St. Petersburg.

UNDER NEW MANAGEMENT.

Russian-American India-Rubber Co., "Treügolnik," St. Petersburg. By virtue of the amended statutes of the company and in accordance with the resolution of the special general meeting of December 18 to 31, 1910, the business of the company, from and after January 1, 1911, will be attended to and controlled by a council and a board of directors. The council consists of Baron Ferdinand von Krauskopf, president; Franz Uthemann, Jr., vice-president; Hendrik van Gilse van der Pals and Carston Stender, of whom Hendrik van Gilse van der Pals and Franz Uthemann, Jr., are named as delegates. The board of directors consists of Arthur Kraack, chairman; Ernst Schubert, vice-chairman; Arthur Eilenberg, Julius Koettwitz and Otto Nauck. As authorized agents, Iwan Anissionoff, Eugen Hoffman, Gustav Moline, Arnold Mielenhausen and Hermann Schultze. In addition, power as agents was conferred on Carl Henry, Max Hurt, Julius Jaweeir, William Laudesen, Waldemar Meuschen, Karl Naumann, T. Stephens, R. Stricter and Alfred Swann.

GREAT BRITAIN.

THE North British Rubber Co., Limited (Edinburgh, Scotland), have established a branch at Paris, France, with 250,000 francs [= \$27,500] capital, and the title Société Anonyme North British Rubber Company. The office of the North British Rubber Company A. G., in Berlin, has been removed from 9-10 North Friederich strasse to 25 Oranien strasse, Berlin, S. O., 26.

The Bavarian Rubber and Asbestos Works—the English Branch of Actiengesellschaft Metzeler & Co., of Munich—are mentioned as having secured a contract to fit 200 of the motor buses of the London General Omnibus Co. with their tires. These tires are also in use in the Bavarian postoffice service.

The Ancoats Vale Rubber Co., Limited (Ancoats, Manchester), have opened a London office at 6, Crosby square, E. C., in charge of E. A. Saunders, who has long been connected with the London rubber goods trade.

An item of interest in the balata trade is the registration in Edinburgh, December 17, 1910, of F. R. Muller & Co., Limited, with £55,000 [= \$267,657.50] capital, to take over the business of F. R. Muller & Co., of 47, Waterloo street, Glasgow, with branches in London and Liverpool, as india-rubber, gutta-percha, and balata merchants and importers.

The Advisers of the West Indian Planters.

NOW that certain of the West Indian islands are beginning to ship rubber, and others are putting in plantations, it is interesting to briefly consider the men who are guiding the planting and whose work has been of such inestimable value to the planters. The group is officially known as the Imperial Department of Agriculture for the West Indies. It was established on the first of October, 1898, on the recommendation of the West Indian Royal Commission 1896-7. The cost of ten years to March 31, 1908, amounting to L 17,420 [= \$84,744.43] per annum, was provided from imperial funds, after which date it has been decided that the department is to continue to be maintained for a further period of five years with gradually reduced grants from the imperial government.

Steps have already been taken in the several colonies concerned to contribute local funds for the purpose of continuing the efforts of the department on the same lines as hitherto. This will ensure that the department is maintained in an efficient condition for some years to come.

The work entrusted to the department is to aid in the maintenance and the supervision of the botanic and experiment stations in the West Indies, devoted to the improvement of sugar and other industries, to establish agricultural schools, the teaching of agriculture in elementary and secondary schools, and the granting of agricultural scholarships.

The head office of the department, with its scientific and clerical staffs, is located at Barbados as the most central situation. Sir Daniel Morris, K.C.M.G., D.C.L., D.Sc., F.I.C., F.C.S., for twelve years assistant director of the Royal Gardens at Kew, formerly director of the Botanical Department, Jamaica, and scientific adviser to the West Indian Royal Commission of 1896-7, was appointed Imperial Commissioner of Agriculture on September 1, 1898, and held the office with the greatest success for ten years. On his retirement in 1908 his services were retained for advising the Secretary of State in Tropical Agriculture. The present commissioner is Hon. Francis Watts, C.M.G., D.Sc., F.I.C., F.C.S. He corresponds directly upon all mat-

ters concerning the general work of the department with the Colonial Office; on matters affecting colonial establishments and expenditure he corresponds with the several governments concerned. The Imperial Commissioner is consulting officer in agricultural matters to the governments of Jamaica, British Guiana and Trinidad. He visits these colonies, and affords assistance when required in regard to the administration of the local agricultural departments, the outbreak of diseases, and the general development of planting industries. He is in administrative charge of the botanic and experiment stations, maintained for the distribution of economic plants, and the improvement of sugar, cacao, lime, fruit, cotton, rubber and other crops; also of the agricultural schools and local experi-

ment plots at Grenada, St. Vincent, St. Lucia, Barbados, Dominica, Montserrat, Antigua, St. Kitts-Nevis, and the Virgin Islands.

The publications issued by the Imperial Department of Agriculture for the West Indies number about 90,000 copies annually. *The Agricultural News* (Vols. I to VIII) is a fortnightly popular review, with a wide circulation in the tropics of the old and new worlds. *The West Indian Bulletin* (Vols. I to X) is a quarterly scientific journal dealing specially with research and experimental works in tropical countries. In addition are issued numerous pamphlets (62 in all) dealing with special subjects; also annual progress reports on sugar can experiments, the work of

the botanic stations, and efforts to extend agricultural education in elementary and secondary schools.

The principal officers on the department staff are:

Imperial Commissioner of Agriculture for the West Indies, The Hon. Francis Watts, C.M.G., D.Sc., F.I.C., F.C.S.
Scientific assistant, Austin H. Kirby, B. A. (Cantab).
Entomologist, Henry A. Ballou, M.Sc.
Mycologist, F. W. South, B.A. (Cantab).
Chief clerk, Alleyne Graham Howell.
Assistant clerk, Murrell B. Connell.
Junior clerk, W. P. Bovell.



SIR DANIEL MORRIS AND HON. FRANCIS WATTS.
Of the Imperial Department of Agriculture for the West Indies.

A BIT of history of interest to rubber men occurs in a recent article by Frank J. Cannon, in *Everybody's*, entitled, "Under the Prophet in Utah." While describing the financing of the Utah Sugar Company he recounts the sale of \$400,000 worth of the company's bonds to the Mormon Church for \$325,000, and a subsequent sale to Mr. Joseph Banigan, whom he calls the "Rubber King" to the amount of \$360,000.

STATISTICS PUBLISHED IN THE *Sarawak Gazette* show a decrease in the quantity of gutta jelatong and gutta percha exported from Sarawak in 1910, compared with 1909, but as prices for both products were somewhat higher during the latter year,

the value of the exports shows no material difference. The export of Para rubber from Sarawak for 1910 amounted to about 17,200 pounds.

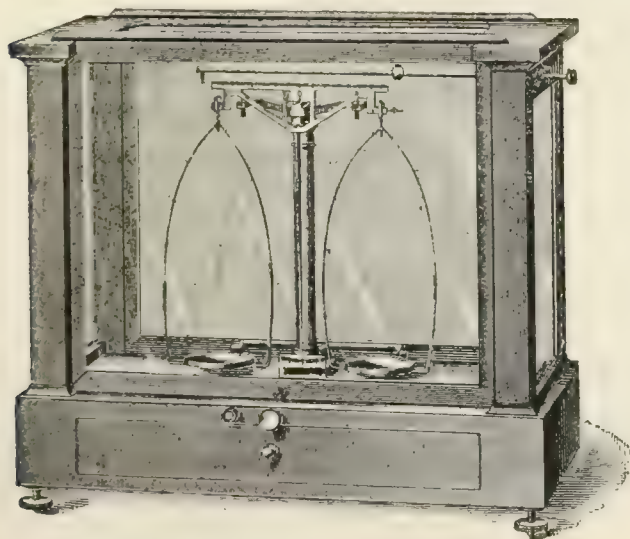
THE UNITED STATES CONSUL AT Valletta, Malta, in a recent report, states that on account of the rock formation of the country roads in that island and the prevalence of stone-block, macadam and asphalt streets in the city, rubber heels are very much used. He expresses the opinion that if a rubber heel can be put on the market by an American house, that would meet the price for the heel supplied by British makers (25 and 30 cents a pair, put on) it would find sale.

WEIGHING THINGS IN RUBBER FACTORIES.

IT IS sometimes claimed that chemists have not made good in rubber lore, and that rubber manufacture has remained to this day, essentially a handicraft wherein mother-wit, intuition and persistent empiricism are the things that count. It is very true that formulae cannot be trusted implicitly, and that a certain indescribable sympathy with the whims of a nervously organized raw material is a much more valuable asset than a knowledge of the atomic theory. Nevertheless, in every great rubber factory today, a laboratory is as much a matter of course as a president or a boiler-room, a chemist has undoubtedly helped these companies in their competition with others who place their trust wholly in things mechanical and in mother-wit.

Every manufacturer, however, should appreciate the really great and useful discoveries made through theoretical chemistry, even when aware of its limitations, especially in the rubber trade, and at the same time insist upon the importance of clear-headed, practical appreciation of the more homely rule of thumb practice, where it is successful.

The success of chemistry has been due, more than all else, to the use of accurate weights and measures and keeping careful,



ANALYTICAL BALANCE

written records. Too much detail will distract the attention from the main issue, but taking notes during an experiment is a real relief to the mind, and pays in the long run.

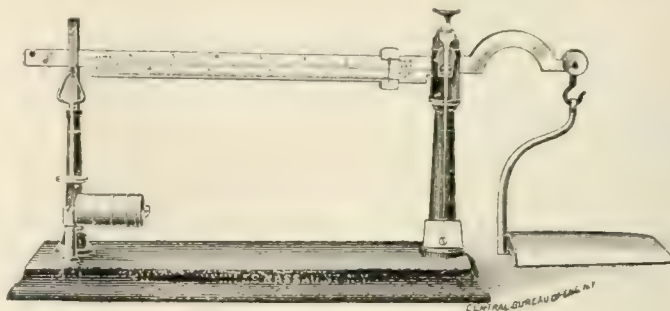
The question of weights is of the utmost importance. The use of liquid measures has been very generally abandoned in favor of weighing, as being more accurate. Balances are true, however, only within a comparatively small range; but by means of the wonderful series of weighing apparatus now on the market, it is possible to weigh anything, from a steamship to a pencil mark. Every rubber factory must necessarily have a number of balances, covering a range of weights with a certain accuracy, but these are too often used above or below their range of accuracy. If the error were constant, beyond this range, it could be allowed for.

There are many types of balances for fine weighing. One, for example, is so delicate that it indicates a difference in weight of one-five hundredth of a milligram, or less than one-fourteen-millionth of an ounce. For such balances there is furnished a unit-weight, weighing 29.1666 grams; so that in quantitative analysis, on the basis of this unit, each milligram represents one troy ounce per avoirdupois short ton. The bearings in these balances are agate planes, resting upon agate knife-edges.

There is also the multiplying scale, for use in counting small articles of the same kind. This has a capacity of four pounds, and is sensitive to one-two-hundredth of an ounce. They are

usually made to count by tens or dozens, though larger multiples could be supplied to order. In using, a dozen of the articles, laid on the long arm, will just balance a gross of the articles on the short beam.

Rubber chemists have always been accustomed to test the specific gravity of rubber samples. For this purpose there are spe-

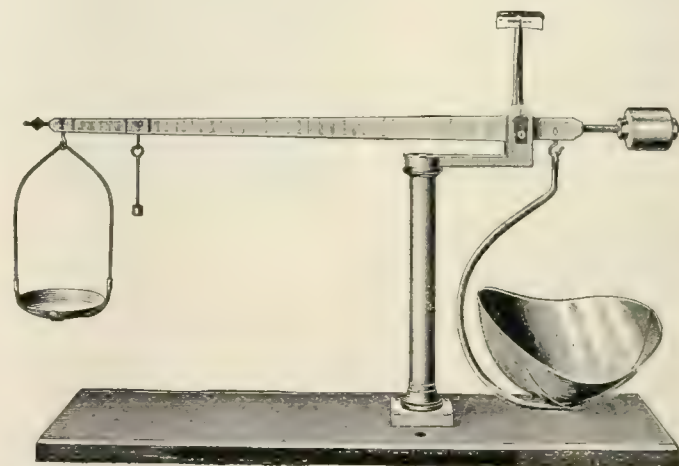


MANUFACTURERS' ESTIMATOR.

cial hydrostatic scales, for weighing in water. There is a sample balance of this type, and also a combination balance, which can be used for ordinary weighing, as well as weighing in water. This combination is an all around useful balance, having a capacity of one kilo, and sensitive to one-half centigram. Some of the finer balances, sensitive to one-twentieth milligram, have also an apparatus for taking specific gravity.

For weighing cloth, or sheeted material of uniform thickness, there are balances provided with a cutter to take out a small unit square, so that the indicator gives the weight of a square yard without the necessity of calculation.

There is a type of balance called an estimator, very convenient for rubber compounding. When a small amount of compound



COUNTING SCALE.

is weighed, the indicator will show, at the same time, exactly how much of the material will be needed to make a batch of rubber for any desired weight or number of similar articles, and this with greater accuracy than can usually be done by figuring.

When balances are occasionally moved, it is best to have them fitted with screw feet and a spirit level, so that they can be trued up for any table or counter. The hangings are of aluminum, for lightness, and the metal parts should be of platinum, brass, or otherwise made non-corrosive. It is best to have the whole enclosed in a glass case, to exclude dust, and to keep the metal parts at an even temperature. Very fine readings must be done with a magnifying glass.

Usually a set of weights goes with each balance, but these can always be found in the general market, too, ranging from a milligram (about one twenty-eight-thousandth of an ounce) to 50 pounds. The metal of these must be non-corrosive, since corrosion increases their weight and destroys their accuracy.

Recent Patents Relating to Rubber.

UNITED STATES OF AMERICA.

ISSUED FEBRUARY 7, 1911.

- N**O 983,770. Resilient tire. H. M. Deeth, T. J. Deeth, W. J. Deeth and H. N. Deeth, Toronto, Ontario, Canada.
- 983,354. Core for manufacturing pneumatic tire shoes. W. S. Doll, Akron, Ohio.
- 983,387. Machine for cutting rubber rings. W. P. McGeouch, Somerville, Mass.
- 983,433. Friction clutch. J. A. Friddle, Pomeroy, Wash.
- 983,612. Vehicle wheel. W. H. Fahrney, Chicago, Ill.
- 983,671. Hose coupling. J. E. W. Boesch, Columbia, Nev.
- 983,785. Tire mold. J. W. Thropp, Trenton, N. J.
- 983,789. Rim for the road wheels of vehicles. G. Webb, Monmouth, England, assignor to The Spencer Moulton Rim Syndicate, Ltd., London, England.
- 983,812. Manufacture or purification of india-rubber and the like and the obtaining of by-products therefrom. C. Dreyfus and A. Friedl, Manchester, and W. H. Bentley, Irlam, England. Assignors to Clayton Aniline Co., Ltd., Clayton, near Manchester, England.
- 983,819. Manufacture of rubber shoes. E. C. Gavin, assignor of one-half to A. O. Bourn—both of Bristol, R. I.

ISSUED FEBRUARY 14, 1911.

- 983,871. Syringe. J. J. Brin, Chicago, Ill.
- 983,878. Mechanically adjustable resilient tire. B. Dahl, Minneapolis, Minn.
- 983,880. Vehicle wheel tire. C. G. Deming, Syracuse, N. Y.
- 984,060. Hose rack. W. D. Allen, assignor to W. D. Allen Mfg. Co.—all of Chicago, Ill.
- 984,099. Belt. M. T. Manoog, Brockton, Mass.
- 984,153. Pneumatic pressure gage. O. Olsen, Fruitvale, Cal., assignor of one-half to L. Wiener, Alameda, Cal.
- 984,186. Rim for automobile tires. G. H. Bogenhagen, Beemer, Neb.
- 984,382. Tire setter. B. E. Martin, St. Marys, W. Va.
- 984,427. Valve. N. M. Hansen, assignor to the De Vilbiss Mfg. Co.—all of Toledo, Ohio.
- 984,453. Tire inflation testing appliance. E. A. Terpening, Geneseo, Ill.
- 984,499. Antiskidding device. E. B. Stimpson, assignor to Edwin B. Stimpson Co.—all of New York.
- 984,500. Tire protective rivet. *Same.*

Trade Mark.

- 53,696. Bourn Rubber Co., Providence, R. I. The word *Rival*. For boots and shoes.

ISSUED FEBRUARY 21, 1911.

- 984,597. Tire. T. W. Peet, assignor of one-half to A. F. Johnson—both of New Britain, Conn.
- 984,608. Footwear. E. Roberts, Leicester, England.
- 984,672. Pneumatic tire. A. Hormel, assignor to Hormel Auto-Appliance Co.—all of New York.
- 984,725. Hose drier. B. M. Wilhite and F. I. Letsen, Gordon, Neb.
- 984,758. Machine for reducing rubber or similar material to an impalpable powder. C. E. Gardner, Gloucester, England.
- 984,765. Foldable bath mat. B. D. Knickerbocker, Chicago, Ill.
- 984,806. Rubber sole. R. E. Foster, Hyde Park, Mass.
- 984,833. Demountable rim. P. J. McCullough, St. Louis, Mo.
- 984,836. Packing. S. P. Morrison, Stuttgart, Ark., and V. Morrison, Indianapolis, Ind.
- 984,856. Flexible metallic tubing. C. T. Schoen, Media, Pa.
- 984,876. Metal protector for hose couplings. G. S. Wood, Chicago, Ill.
- 984,888. Piston packing expander. G. Christenson, Nevada, Mo., assignor to H. W. Johns-Manville Co., New York.
- 985,073. Tire tightener. F. F. Slay and S. M. Henry, Groom, Tex.

ISSUED FEBRUARY 28, 1911.

- 985,146. Valve. A. V. Clorius, Copenhagen, Denmark.
- 985,302. Tire. A. B. Thoman and P. H. Slamin, assignors to the Empire Tire Co.—all of Trenton, N. J.
- 985,397. Tire for vehicle wheels. L. A. Coleman, assignor of one-third to H. G. Whitehead—both of Norfolk, Va.
- 985,522. Lawn sprinkler. H. Gibbs, assignor to W. D. Allen Mfg. Co.—all of Chicago, Ill.
- 985,532. Tire patch. G. J. Martel, Chicago, Ill.
- 985,538. Sheath for vehicle wheels. W. K. Omick, Detroit, Mich.
- 985,551. Hose coupling for air brakes. F. Roberts and V. J. Roberts, Auckland, New Zealand.
- 985,648. Hose repairer. T. H. Wieder, Warren, Ohio.
- 985,683. Tire removing apparatus. J. Lassale, San Jose, Cal.
- 985,741. Play ball. G. L. Harvey, Chicago, Ill., assignor of one-half to F. H. Richards, Hartford, Conn., one-sixth each to G. L. Cragg and Oscar J. Friedman, Chicago, Ill.

Trade Mark.

- 52,950. Charles A. Daniel, Philadelphia, Pa. The word *Valvolite*. For lubricated textiles for rod and valve packing.

[NOTE.—Printed copies of specifications of United States patents may be obtained from THE INDIA RUBBER WORLD office at 10 cents each postpaid.]

GREAT BRITAIN AND IRELAND.

PATENT SPECIFICATIONS PUBLISHED.

The number given is that assigned to the Patent at the filing of the application, which in the case of these listed below was in 1909.

*Denotes Patents for American Inventions.

[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, FEBRUARY 1, 1911.]

- 22,903 (1909). Waterproofing leather by treatment with gum balata. W. K. L. Dickson, London.
- 22,984 (1909). Tapping rubber trees. W. L. Spence, Glasgow.
- *23,110 (1909). Devulcanizing rubber. E. E. A. G. Meyer, Detroit, Michigan.
- 23,116 (1909). Infants' soothers; india-rubber articles. Shirley Bros., Southwark, and R. D. Kay, Shepherd's Bush, London.
- 23,134 (1909). Spring wheel with arched india-rubber springs. A. Tomlins and H. Lemarchand, London.
- 23,172 (1909). Pneumatic tire. M. F. de R. de Colombier, Paris, France.
- 23,306 (1909). Golf balls. G. H. Murphy, London.
- 23,308 (1909). India-rubber fabric. A. T. Collier, St. Albans, Hertfordshire.

[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, FEBRUARY 8, 1911.]

- 23,471 (1909). Cutting machines for india-rubber. J. A. Hill, Sheffield.
- 23,661 (1909). Pneumatic tire. Akt.-Ges. Metzeler & Co., and Dr. Haberland, Munich, Germany.
- 23,664 (1909). Rubber soles for boots, etc. A. Vorwerk, Barmen, Germany.
- 23,668 (1909). Rubber substitutes. L. C. T. Turcat and G. Nuth, Neuilly-sur-Seine, France.
- 23,682 (1909). Auxiliary rim attachment for tires. E. W. Hewett, Bishops Waltham, Hampshire.
- 23,736 (1909). Pneumatic pads for horse collars. T. Dent, Christchurch, New Zealand.
- 23,763 (1909). Rubber heel protector. A. Fearnside and C. Fearnside, Bradford.
- 23,833 (1909). Detachable pneumatic tire. H. Herrmann, Montreal, Canada.

[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, FEBRUARY 15, 1911.]

- *23,887 (1909). Method of making rubber articles. F. J. Gleason, Waltham, Massachusetts.
- 23,987 (1909). Pneumatic tire. J. C. Berry, Harrow, Middlesex.
- 24,006 (1909). Waterproofing fabric with rubber or gutta-percha solution. A. A. A. Zimmer, London.
- 24,064 (1909). Protective band for wheel tires. G. C. Waterfield, South Farnborough, Hampshire.
- 24,099 (1909). Dress shields of rubber or like material. E. R. Davis, Bexhill-on-Sea, Sussex.
- 24,260 (1909). Cow milker. T. T. Sabroe, Copenhagen, Denmark.
- 24,262 (1909). Detachable rim for vehicle wheels. L. H. Jacobs and T. G. Jacobs, London.
- 24,272 (1909). Tread band for pneumatic tires. F. R. de Urruela, Paris, France.
- 24,330 (1909). Joint for rubber tires and belts. H. Brook, Blackpool, Lancashire.
- 24,338 (1909). Protecting sheath for pneumatic tires. A. Whiteway, and Charles Macintosh & Co., Ltd., Manchester.
- 24,341 (1909). Pneumatic tire. J. R. Trigwell, London.

[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, FEBRUARY 22, 1911.]

- 24,398 (1909). Pneumatic tire. Dunlop Pneumatic Tire Co., London, and W. H. Paull, Birmingham.
- 24,542 (1909). Hot water bottles. G. H. W. Blick, and D. Mosley & Sons, Manchester.
- 24,662 (1909). Protector for tires. J. Rees and E. D. Rees, Roath, Cardiff.
- 24,688 (1909). Pneumatic tire. E. Hawley, and A. H. Collier, London.
- 24,719 (1909). Spring wheel. J. Giraud, Paris, France.
- 24,795 (1909). Pneumatic tire. W. G. Oxley and M. H. Walsh, London.
- 24,803 (1909). Pneumatic tire. G. Baldwin, Banbury, Oxfordshire.
- 24,852 (1909). Spring wheel with inflatable rim. J. Elias, Salford, Manchester.
- 24,890 (1909). Wheel tire built up of ropes of fibrous material impregnated with rubber. G. D. Rose and A. A. Lawrence, Manchester.
- 24,956 (1909). Tire cover made of rubber covered chain. C. M. Gautier, London.
- 25,029 (1909). Molding tires. A. Olier, Clermont-Ferrand, Puy de Dome, France.

THE FRENCH REPUBLIC.

PATENTS ISSUED (with Dates of Application).

- 418,730 (July 26, 1910). F. H. de Lostadot. Elastic tire for all vehicles.
- 418,756 (October 7, 1909). D. Lance. Process for the manufacture of rubber tires.
- 418,934 (July 11, 1910). Vicomte de Grassin. Elastic pneumatic-mechanical tire, for wheels of automobile vehicles.
- 419,090 (August 9). J. Motycka. Compressed air tire for vehicles of all descriptions.

- 419,130 (August 9). H. A. Gamble. Protective, anti-skidding cover for pneumatic tires.
- 419,150 (August 10). P. A. Rouveyre and M. E. Rouveyre. Protected, anti-skidding pneumatic tire.
- 419,281 (August 11). F. Paulet. Process by which can be imparted to rubber and substances derived therefrom, any desired color permanently.
- 419,316 (August 12). Société Farbenfabriken, formerly Fried. Bayer & Co. Process for the production of a substance resembling rubber and products made from it.
- 419,483 (August 19). E. V. Belledin. Elastic tire.
- 419,538 (August 16). E. E. Gavois. Fixed extensible heel of rubber.
- 419,550 (August 20). T. Gare. Improvements applied in manufacture to the molding and remodeling of rubber articles.
- 419,581 (August 20). A. Roger. Pneumatic tire, with double tread, with installed felloes and wearing tread.
- 419,680 (August 25). F. Bihl. Elastic tire without air chamber.
- 419,754 (August 12). Establishment of F. Beer. Pneumatic puppet of rubber.
- 419,750 (August 5). H. Hassen. Non-splitting pneumatic tire, for bicycles and all vehicles.
- 419,764 (August 17). F. H. Garrett. Non-skidding device for road automobiles.
- 419,819 (August 29). A. W. Torkington. Improvements applied to elastic tires or the like, for wheels of road vehicles.
- 419,786 (August 27). A. R. Van der Burg. Substance replacing rubber and the process of its manufacture.
- 419,880 (August 31). N. Braubart. Wheel tire, entirely of rubber and device for its attachment.
- 419,860 (November 6, 1909). G. Reynaud. Process for the industrial manufacture of rubber.
- 419,931 (November 8). Société B. Abeil et fils. Elastic tires for vehicle wheels.
- 419,790 (August 27, 1910). The Star Rubber Co. Apparatus for the manufacture of water-bags and other hollow, seamless articles of rubber.

[NOTE.—Printed copies of specifications of French patents can be obtained from R. Robet, Ingenieur-Conseil, 16 avenue de Villier, Paris, at 50 cents each, postpaid.]

PRESIDENT'S TROPHY AT THE RUBBER EXHIBITION.

ONE of the most attractive and interesting features of the Second International Rubber and Allied Trades Exhibition which will open in London on June 24, promises to be the various competitions for which handsome prizes in the shape of silver cups, trophies, etc., have been offered. Several of these have already been described and illustrated in the columns of THE INDIA RUBBER WORLD and we are enabled to present herewith an illustration of "The President's Trophy," offered by the president of the exhibition, Sir Henry A. Blake, G.C.M.G., for the exhibit proving of greatest interest in connection with the production, preparation or use of rubber in any form.

A better idea of the broad scope of this competition may be obtained from the following details in regard to the plan on which the award will be made by competent judges who will inspect and test all exhibits they may consider worthy and make the award according to their own judgment, no matter from what country the exhibit may come.

1. To the manufacturer showing the greatest variety of articles made from rubber, or it may be for one article only.
2. Or it may go to a manufacturer of machinery, or for some labor-saving device that would benefit manufacturers or planters.
3. Or for some simple invention of great value to all connected with the rubber industry.
4. Or to the exhibitor of some article which demonstrates how largely rubber may be used for general and commercial use in a way hitherto unknown.

It will be seen from the foregoing list that the competition is practically thrown open to every manufacturer, chemist, planter, inventor, maker of machinery, etc., irrespective of nationality, the award being made strictly for the exhibit made.

All that is necessary is that the exhibit be in the hands of the Awards Committee on or before the night of May 1, as the entries will then be closed, but entries received subsequently, the envelopes of which bear the post mark May 1, no matter where mailed, will be accepted as within the time limit. All entries must be sent full carriage prepaid, addressed Awards Committee, International Rubber and Allied Trades Exhibition, Royal Agricultural Hall, Islington, London, N., and must be marked as to which competition they are to be entered for; thus exhibits intended for the competition above referred to must be marked "The President's Trophy."

There is nothing to prevent a competitor entering as many competitions as he may wish, provided the conditions of each are complied with, nor is any special printed form necessary. Any further information desired may be obtained by addressing A. Staines Manders, organizing manager, International Rubber and Allied Trades Exhibition, 75 Chancery Lane, Holborn, London, W. C.



PRESIDENT'S TROPHY AT THE RUBBER EXHIBITION.

The cup, as our illustration shows, is a handsome and artistic piece of silversmith's work and bears on the front side the inscription, "International Rubber and Allied Trades Exhibition, London, June and July, 1911. Patron, His Majesty, the King; President, Sir Henry A. Blake; A. Staines Manders, Manager, and Miss D. Fulton, Secretary." On the reverse side the inscription reads: "President's Trophy. Awarded to ———" the name of the successful competitor.

THE botanical garden of the Museu Goeldi, at Pará, Brazil, has increased in area more than threefold in fifteen years. The director of this institution, Dr. Jacques Huber, writing in the *Bulletin of the Pan American Union* (Washington: January, 1911) says of the trees and shrubs cultivated in the garden: "Some of them are of great industrial value, as for instance, the species of *Hevea*. Of this plant the garden possesses the richest collection in the world. The experimental garden, originally designed for experimental cultivation of plants having a commercial value, is wholly occupied by the various Amazonian rubber trees, chiefly species of *Hevea* and *Sapium*." The Pará museum, it will be remembered, was dealt with at length in a series of letters from the Amazon by the Editor of THE INDIA RUBBER WORLD last year.

A BOOK for rubber planters—Mr. Pearson's "What I Saw in the Tropics."

The Late John Hinchley Hart.

THE sad news that Mr. John Hinchley Hart, F. L. S., passed away at his home in Trinidad, West Indies, on February 20, recalls his many years of service as a tropical agriculturist.

Nearly ten years ago the editor of THE INDIA RUBBER WORLD received some most interesting samples of rubber extracted from *Castilloa* shoots less than a year old. The sender was Mr. Hart, who accompanied the samples with an interesting paper on the possibility of making the *Castilloa* or some other rubber producer an annual crop-giver like sugar cane. This incident is cited simply to emphasize the alert interest with which the scientist mentioned regarded rubber planting and production.

Beginning at the age of 20 in one of the great horticultural establishments in London, he soon had an offer to go to Canada, where he ranked high, both as a landscape and an horticultural expert. In 1875 the Imperial Government sent him to Jamaica, where he was in practical charge of all government gardens and lands and accomplished much. He explored the island very thoroughly and added numbers of new species to the flora of Jamaica. Later he took full charge of the government cinchona plantations, which work he followed until his promotion as superintendent of the Royal Botanical Gardens at Trinidad.

In twenty years he made them noted, as the most beautiful and complete of any tropical botanic gardens in the world.

Retiring three years ago on a maximum pension, he purchased a house close to the gardens and prepared to enjoy a well-earned rest.

His mental and physical activity, however, kept him at work. He wrote much, advised on tropical agriculture, and even made arduous trips to distant countries in the interest of his profession.

His particular specialty was ferns, on which he was an authority. He also did much research work in connection with plant diseases; work that has been of value in tropical agriculture.

A great conversationalist on paper, Mr. Hart loved the give and take of wordy warfare. His strictures, however, were wholly without personal animus and those who knew him appreciated his warmth of heart and the generosity of his nature.

The editor of THE INDIA RUBBER WORLD, penning this inadequate sketch, a stone's throw from the gardens, beautified by twenty years of conscientious work by Mr. Hart, confesses to a sense of great personal loss, a loss that is shared by the whole planting world.

WILLIAM YERDON.

WILLIAM YERDON, Fort Plain, New York, inventor and manufacturer of Yerdon's improved double hose bands, extensively sold by rubber goods dealers, died at Fort Plain on March 19. Deceased, who has been ailing for several years, was sixty-three years of age. He was highly esteemed in the community and was for some time postmaster at Fort Plain. He leaves a widow, a son and a daughter, and the business of manufacturing Yerdon's improved double hose bands and other specialties, will be continued by the widow as executrix of the estate, with the as-

sistance of Mr. J. E. Barker, who has been active in its management for the past four years. He is thoroughly familiar with the technical features of the device as well as with its manufacture and announces his intention to maintain the standard of quality for which it is famous.

OBITUARY NOTES.

MOSES DWIGHT WELLS, who died recently in Chicago, was one of the pioneer merchants in that city, and founder of the corporation, M. D. Wells Co. Mr. Wells was a native of Massachusetts, and went to Chicago in 1852, at once becoming interested in the shoe jobbing trade with a brother already established there. The business in which Mr. Wells was interested was conducted at various times under different names, and when the firm took on the manufacture of shoes it was the first enterprise of the kind in the West. The firm were large distributors of rubber footwear. Mr. Wells retired from active business when the firm became a corporation, in 1902. According to his will, filed for probate in Chicago, the estate is estimated to be worth \$1,200,000.

THE death is reported of John Hall, for many years a member of the firm of Hall & Hamlyn, Limited, rubber and leather merchants, Hull, England. The business, in which he took an active interest, was established twenty-nine years ago, but for several years, owing to ill health, deceased had practically retired from its management. He was widely esteemed, in business circles and as a public-spirited citizen, and at the time of his decease was but 55 years of age.

THE recent decease is reported, at Leicester, England, of Robert Edlin, who is credited with having built, in 1888, the first velocipede to be fitted with a pneumatic tire, of the type now so universally employed. When a young man, he made a hobby of velocipede construction and acquired a reputation for his success in this field. When, in 1887, J. B. Dunlop devised the first pneumatic tire, Mr. Edlin was suggested as the man who could furnish a machine to fit it and the result was the first pneumatic-tired bicycle.

Through a United States Consul in Germany, the Department of Commerce and Labor, at Washington, D. C., has received a request for quotations from American manufacturers of rubber cloth for printing rolls, prices to be quoted per square meter on cloth about 80 centimeters wide and 2 or 2½ millime thick. The weight per square meter would have to be given and shipments made in rolls packed in cases. The consul's communication was accompanied by a sample of the material, which can be obtained from the Bureau of Manufactures.

To the general reader, interested in topics of a geographical character, *The Rubber Country of the Amazon*, by Henry C. Pearson, affords a fund of interesting and instructive reading. To the rubber man the information it furnishes is indispensable.



THE LATE JOHN HINCHEY HART, F.L.S.

NEW TRADE PUBLICATIONS.

THE KAUFMAN RUBBER CO. (Akron, Ohio), publishes a booklet dealing exclusively with their motor cycle tires. After brief reference to the tire troubles with which the average motorcyclist suffers, the booklet goes on to show, in describing the methods of manufacture the company employs, how they may be avoided by the use of Goodyear tires. Each of the five styles of motorcycle tires the company manufactures, is separately described and illustrated and the reasons given why each is specially adapted for the riding conditions it was designed to meet. Pictorially and typographically, the booklet is a credit to its publishers, and it supplies information that motorcyclists—especially those who have experienced tire troubles—will appreciate.

KAUFMAN RUBBER CO., LIMITED (Berlin, Ontario), have recently sent out their third annual catalogue of "Life Buoy" brand rubber footwear, to cover the years 1911, 1912. It is a well-printed and profusely illustrated publication of 64 pages, the price list and trade discounts being printed on separate cards.

PARKER, STEARNS & Co. (Brooklyn, New York), publish a catalogue of rubber sundries for 1911, a notably handsome book of 90 pages, 9 x 6 inches, attractively bound in blue cloth, on which the company's trade mark "Alpha" boldly stamped in white, is conspicuous. Printed in two colors, in English and Spanish and fully illustrated, it gives wholesale prices of the rubber sundries, mainly surgical and medical goods, for which the company has a world wide reputation, accompanied where necessary with brief descriptions and showing, at the same time, the manner of packing the goods and the distinctive marks under which they are put up. The excellence and profusion of these illustrations materially enhances the value and convenience of this handsome catalogue, to buyers of goods of this nature.

THE ROCHESTER RUBBER CO. (Rochester, New York). Four grades of rubber footwear for which they are selling agents, the Malden, Melrose, Woonsocket and Empire brands, are illustrated and described in a neatly printed catalogue of sixty-two pages (9 x 5 inches) with artistic cover, sent out by the above company. No price list accompanies the descriptions of the goods, the publishers explaining, in a prefatory notice, that a net price list will be forwarded, following any change in the footwear market.

FRANCIS SHAW & Co., LTD. (Bradford, Manchester, England), rubber mill engineers, have issued, for 1911, their catalogue No. 21 of modern rubber plantation machinery. It is a complete compilation of the most modern machinery and appliances for treating the raw product on the plantations, for the use of planters and others interested in the cultivation of rubber, covering 40 pages 11 x 9 inches, with numerous finely executed, photographic illustrations, the accompanying text being in four languages, English, French, German and Spanish, and prices are quoted in sterling for each machine, together with the spare parts the purchaser is advised to supply. Many of the illustrations are made from machines built by the company for use on plantations.

THE GUTTA PERCHA AND RUBBER MANUFACTURING CO. (Toronto, Ontario). A new catalogue of the footwear manufactured by the above company, under their "Maltese Cross" trade mark, for the season 1911-1912, has recently been published. It is quite a voluminous booklet—75 pages, 6 x 4 inches—and fully illustrates the comprehensive line of rubber boots and shoes the company manufactures. No prices are quoted in the catalogue, but it is accompanied by a separate 24-page booklet of the same size giving net prices to the retail trade, subject to cash discounts, which are also quoted.

SYRACUSE RUBBER CO. (Syracuse, New York), publish a comprehensive catalogue of automobile, motorboat and aeroplane supplies. As dealers in strictly high grade goods, their handsomely printed publication of 145 pages, 10 $\frac{3}{4}$ x 7 $\frac{3}{4}$ inches,

presents a complete assortment in each of the above-mentioned classes, showing illustrations wherever they are likely to prove an aid to the satisfactory description of the goods referred to and quoting prices. With its well arranged index it should form a valuable guide for buyers of this class of goods.

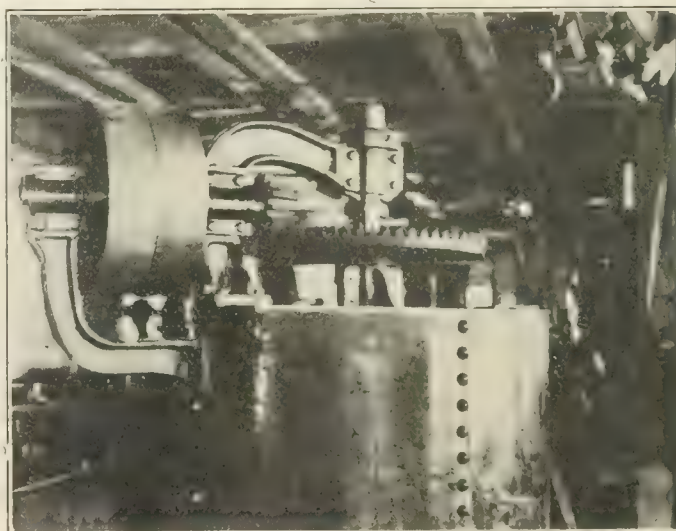
CENTRAL ELECTRIC COMPANY, Chicago, have sent out, under date March, 1911, a price list and discount sheet, applying to their 1909 catalogue, No. 26. It covers 84 closely printed pages, 8 x 5 $\frac{1}{2}$ inches and supersedes all previous quotations.

THE BRISTOL Co. (Waterbury, Connecticut), are sending out, in the form of a 44 page booklet, distinguished as Bulletin No. 131, a catalogue of the Bristol's Recording Voltmeters for switch-board and portable service. Profusely illustrated and accompanied by 12, 8 and 6-inch charts, besides describing their voltmeters, it also gives a partial list of about 1,000 users of these devices, which includes the names of many of the most prominent electric lighting and power companies in the United States and elsewhere.

IMPROVED MIXING CHURN CONSTRUCTION.

THE mixing of rubber compounds, owing to the heavy strain of the stiff mass on the mixer, requires that this part of the apparatus be very strongly constructed. The G. V. Scott Co., Brockton, Massachusetts, have made some important improvements in this class of machines with this end in view.

As the accompanying illustration shows, they build a churn that is entirely self contained, the working parts of which, with their



IMPROVED COMPOUND MIXING CHURN.

bearings, are all above the tank. The strong, overhanging arm, supports the whole weight of driving shaft, gearing and revolving arms, a socket at the bottom of the tank serving to steady the shaft against lateral movement, without, however, having to sustain any of the weight. Two bearings support the shaft, one on the end of the arm, immediately above the large bevel gear, and one carried by the top of the tank immediately beneath the gear, which is large toothed and very strongly cast. The extreme upper end of the shaft is fitted with a screw adjustment, by means of which any wear on the loose rings that carry the weight can be easily taken up. The smaller bevelled gear is keyed to the end of the driving shaft, which is also supported by two bearings and between these are the tight and loose pulleys, the former keyed to the shaft. All arms and gears are secured by keys, in place of using set screws. These churns are all made of one diameter (36 inches), but the height can be varied as desired when ordering.

Asbestos as a Commercial Product—I

ASBESTOS, from the Greek word meaning "inconsumable," is the name applied to two fibrous minerals, *amphibole* or hornblende asbestos and *chrysotile* or serpentine asbestos. These minerals are much alike in external appearance, chemical composition and ability to resist heat. There are many other fibrous like minerals called asbestos but none of commercial importance.



KING BROS.' ASBESTOS MINE, THETFORD, CANADA

Asbestos, using the term generally, is quite widely distributed over the earth's surface. It was first discovered in Susa, Italy, where it has been mined for several hundred years. It is also found in parts of Russia, Siberia, New South Wales, Africa, Mongolia, Queensland and England. In our own country it is confined to parts of Virginia, South Carolina, Arizona, Vermont and Canada. The greater part of the world's supply comes from the last named country, and is the form of asbestos known as chrysotile. Chrysotile or serpentine asbestos is found in the non-fibrous mother rock in the form of small veins, "laces" or "stringers." In its original position it lies perpendicular to the bordering planes. Its fiber is uniform in length, very flexible and elastic, and fine. The length, the controlling element in grading the various qualities, rarely exceeds two inches and is more often one inch or less.

The high temperature of 2,000 degrees and 3,000 degrees Fahrenheit it easily withstands, and often a temperature of 5,000 degrees Fahrenheit seems to work no visible ill effect. Its hardness is equal or somewhat superior to calcspar. In specific gravity it resembles porcelain and glass, and it resists acids exceedingly well. In color the Canadian chrysotile is yellow, greenish-yellow and bright green to very dark green, and some blue has been found. When the fiber has been drawn out, it assumes a silky white appearance. Typical Canadian asbestos has a chemical constitution about as follows: silica, 40; magnesia, 41.3; ferrous oxide, 2.5; alumina, 2.2, and water, 14.

The difference between harsh and soft asbestos is largely a question of the amount of water present—the more water, the softer the material. Thus, it is said that a very fine quality of fiber disclosed, upon analysis, the presence of 14.38 per cent. of water, and a harsh specimen was found to contain only 11.70 per cent. Further it was observed that asbestos became brittle with the expulsion of water by heat.

The principal localities whence Canada derives her great output of asbestos are in the province of Quebec, more particularly in the eastern townships. The most important district is in the vicinity of Thetford and Black Lake. In this region are masses

of serpentine rock intermingled with strata of slate, schist and diorite. In the immediate neighborhood of Black Lake, the serpentine forms a mountainous ridge rising to a height of 900 feet above the railway. On this ridge are some of the most productive of the asbestos mines. It is in the serpentine rock of this general district that the chrysotile veins are located. The thickness of the vein is, ordinarily, the length of the fiber, since the latter occurs perpendicular to the faces of the enclosing rock. The asbestos is usually detached without trouble. In some cases, however, it clings stubbornly and the separation becomes a matter of difficulty.

Most asbestos is mined on or near the surface. The first operation consists in breaking up the rock mass in which the asbestos veins occur. It has, as a rule, been found best to proceed as one would in a quarry. Underground methods are regarded as inadvisable. In mining asbestos by the quarry method, one must consider future possibilities, otherwise one will be likely to dump the refuse near to the quarry, with the result of sooner or later interfering with the prosecution of work. Provision must be made for the transportation of the raw material at once. Taught by previous experience, the operator constructs a long tramway and dumps the refuse on a spot which he does not expect to exploit.

If the site for the mine be covered with surface soil, this is removed. In the Blake Lake and Thetford district, the overlying soil is sometimes 15 to 20 feet thick. If the open quarry method is to be employed, the soil is removed in the summer time. The Bell Asbestos Company, of Thetford, have introduced the steam shovel method for such work.

Mining operations are carried on by a terrace-like arrangement. The rock is blasted out with dynamite, containing about



CANADIAN CHRYSOTILE ASBESTOS

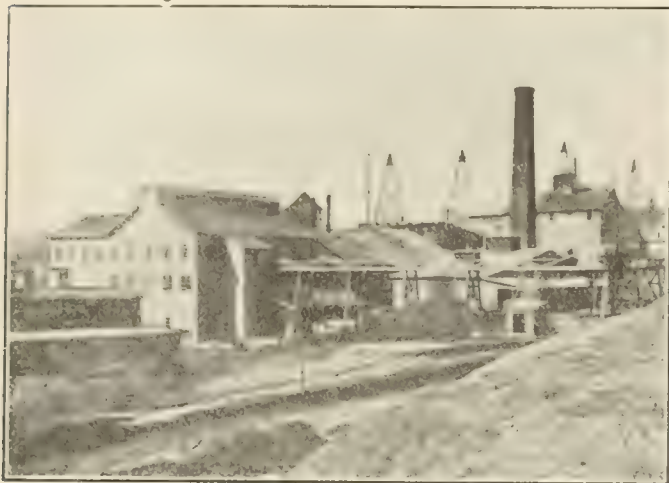
40 per cent. of nitroglycerin. Holes are drilled and dynamite cartridges 8 inches long and 1¼ inches in diameter are employed. The blast holes range in the neighborhood of 8 to 10 feet in depth. The expense for explosives is said to be about three cents per ton where the rock is solid and massive. A pound of dynamite will dislodge about 4½ to 5 tons of rock.

The spoil will naturally consist of asbestos bearing rock and

that which is barren. Its removal to the tram cars constitutes quite a problem. Sometimes derricks are used. But where a considerable extent of surface has to be covered, the use of a cableway has been found advantageous. This cableway consists

this is first sent to the *dryer*, and afterwards, for treatment to the mill.

Hand cobbing is performed by men and girls. The men attend to the heavier pieces of material which when broken up



THE ASBESTOS AND ASBESTIC CO.'S PLANT, DANVILLE, CANADA

of a steel cable, perhaps 400 feet long, which is suitably supported at either end, and of a carriage or basket which runs on it. In addition to the steel rope which constitutes the suspension bridge for the carriage, there are, of course, ropes for adjusting the hoists, stoppages, etc. Working of these cables is controlled by an operator at one end of the line. Of course, if the cableway is inclined at a sharp angle the cable paraphernalia is much more simple. The inclination of the cableway being sufficient to prevent the carriage moving until the load has been hoisted, the cableway is often run by an engine, the steel ropes passing over



EL CHEER, A VERY RICH ASBESTOS PROPERTY IN MONGOLIA.

large drums, and it is so completely under control that it is often used to shift heavy pieces of rock at the bottom of the pit or to handle heavy machinery and the like. The carload of debris is dumped on to the tram car which takes it to its destination. If the cars contain nothing but barren rock, they are sent to the dump. Certain material from the pit, however, contains fibers of asbestos—fibers having lengths varying from 5-16 of an inch up. This is sent to the *cobbing sheds*, where it is dressed by hand. Material containing the shorter fiber, scrapings and the like goes to the *mill* where mechanical treatment is applied. Certain of the material will contain more or less moisture, and



KOREWO MINES, ASIATIC URALS.

are sent on for the girls to sort into grades. The responsible part of the "cobbing" as it is called, falls to them. They are seated before long tables, having a square of steel in front of each girl, upon which they pound and separate the rock from the fiber. For this purpose are used small steel hammers not weighing over $\frac{1}{2}$ a pound, as great care must be taken in not breaking the long asbestos fibers. After the rock and fiber are separated, it is all carefully sifted and the fibers are thrown into compartments marked Grade I and II. No. 1 Grade consists of fibers $\frac{3}{4}$ inch long or more; No. II Grade, of fiber



PRIMITIVE MINING METHODS STILL IN VOGUE IN THE ASIATIC URALS.

ranging from $\frac{5}{16}$ to $\frac{3}{4}$ inch in length. The screenings and refuse from the hand-cobbing process are treated mechanically at the mill. The mill deals with all difficult material—that where the fiber is short, etc.

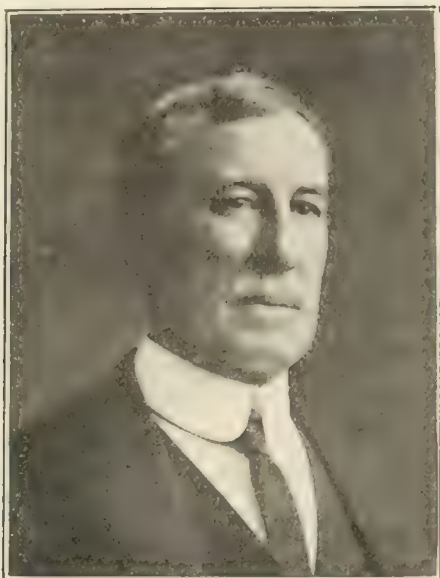
[TO BE CONTINUED.]

THE EXPORTS OF RUBBER WASTES to the United States of America from the consular district of Dresden, Saxony, show a constant increase. In 1907 they amounted in value to \$4,449, in 1908 to \$6,778 and in 1909 they had risen to \$6,803.

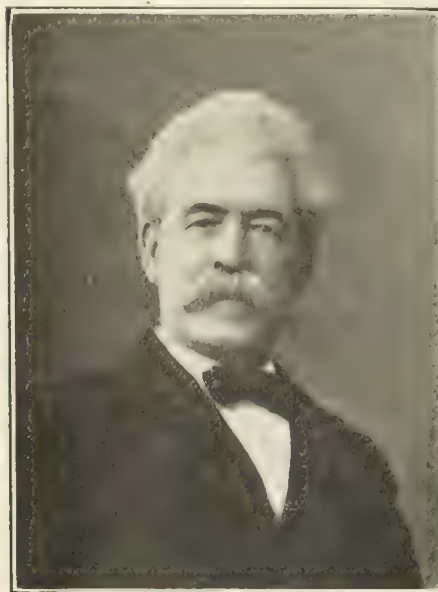
The Forsyth Dental Infirmary for Children.

THE increasing number of practising dentists and the influential position accorded the dental profession in modern medical science, affords the best evidence as to the importance attached now-a-days, to the care of the teeth. It is

For the most part, however, these dental hospitals and clinics, devote their attention mainly to adult patients, practically overlooking the fact that it is during the period of their development



THOMAS ALEXANDER FORSYTH.
[President Boston Belting Co.]



JOHN HAMILTON FORSYTH.
[Superintendent Boston Belting Co.]

recognized that on their proper protection from malformation and decay, the comfort and health of the human being is to no small extent dependent and in nearly all the large cities, there are, in addition to the private practitioners, public institutions for the promotion of this important branch of hygiene.

in the growing child, that the most important work is to be accomplished for the protection and development of the teeth.

Knowledge of these facts, inspired John Hamilton and Thomas Alexander Forsyth, widely known through their connection with the Boston Belting Co., to establish, as a fitting memorial to



THE FORSYTH DENTAL INFIRMARY FOR CHILDREN.

their deceased brothers, James Bennett and George Henry Forsyth, the Forsyth Dental Infirmary, at Boston, the former of whom had the foundation of such an institution in view, which unexpectedly overtaken by death before his plans had matured.

The infirmary, which judging from the accompanying illustration showing a front view of the edifice, will be a handsome and imposing addition to Boston's public buildings, and in every way in keeping with the best of them, is to be erected on a tract of land, with an area of 51,000 sq. ft., on the Fenway, opening on Hemenway street, one of the choicest and most accessible sections of the city. The land nearest Massachusetts avenue, will be converted into an enclosed park, the portion of the property not occupied by the building will be handsomely laid out, the two wings partially enclosing a sunken garden. From the residence in Brookline, of the Forsyth family, the infirmary will be plainly visible.

The total cost of the building and equipment, with the land, will be not far short of \$2,000,000; the land has already been purchased and conveyed in trust to the institution which has been incorporated, by special act of legislature. In addition, an endowment of \$1,000,000 will be placed in the hands of the Old Colony Trust Company, to be invested for the benefit of the infirmary. Of the income, 90 per cent. will be turned over to the trustees for current expenses, the remaining 10 per cent. will be used, half as a research fund, the remainder as a rebuilding fund. One of the trustees will represent the Old Colony Trust Company in the board and he will be the treasurer of the infirmary.

Every provision has been made by the founders for the attainment of the maximum degree of efficiency and utility by the institution. There will be 104 chairs and the equipment throughout will be of the best and most modern character. There will be a permanent staff of dentists in constant attendance, as well as a consulting staff, made up of dental practitioners who volunteer their services. Post graduate and regular students' courses will also be provided for.

All deserving children, under sixteen years of age, will be entitled, free of charge, to advice and treatment at the infirmary. Patients above the age limit will also be attended, on payment of a small fee, and where it may be necessary, artificial work will be undertaken for the younger patients, for which ample provision will be made in the laboratories of the infirmary. A museum, as a depository for material of every description, for use in teaching dental hygiene and a lecture room, in which addresses on the subject will be delivered by experts, will be free to the public. A comprehensive dental library is also part of the plan.

The family, to the judicious munificence of whose members Boston is indebted for this unique institution, is of ancient ancestry, tracing its lineage to Cadet De Forsath, who in 1236 was in the train of Eleanor, daughter of the Comte de Provence when she journeyed to England to become the wife of Henry III., King of that country, and to his son William de Forsath, who is recorded as having taken the oath of fealty to King Edward I. of England, in 1296. From these ancestors the descent is traced of William Forsyth, son of Captain John Forsyth, of the British army, and father of the donors of the infirmary. He was born in Ayrshire, Scotland, in 1807, came to Boston in 1828, subsequently becoming a resident of Brookline. Of five sons and three daughters born to him, only the two sons above mentioned, whose portraits are presented herewith, survive. Both are actively engaged in business with the Boston Belting Co.

AN IMPROVEMENT IN ANTI-SLIP plugs for rubber soles is the subject of a patent issued to R. E. Foster, Hyde Park, Mass., under number 984,806. His solid plug, previously used, made the sole less resilient; this he remedies by inserting canvas treads in part on the surface, in part somewhat below it; the latter coming into wear when the former have been worn away.

THE EDITOR'S BOOK TABLE.

BRITISH GUIANA, BALATA AND RUBBER INDUSTRIES. PREPARED by the secretary of the Permanent Exhibitions Committee of British Guiana and issued by that body. [Paper, 32 mos. Pp. 16.]

A NEATLY printed booklet, giving a brief historical account of the industry, with statistics as to its growth, information as to the area devoted to rubber production, rubber estates, methods of cultivation, the labor problem and particulars as to yield, etc. Similar booklets relate to the sugar and rice industries, each of which furnishes interesting data relative to the development of the colony and its material prosperity.

KOLONIAL HANDELS ADRESSBUCH, 1911 (15 JAHRGANG) MIT KARTEN DER KOLONIEN IN BUNDRUCK. Berlin. Kolonial-wirtschaftlichen Komitee, 1911. [Paper, large 8vo. Pp. 450. Price, 2.50 marks.]

A COMPLETE compendium of information in regard to German colonies in all parts of the world, with their governing officials, railroads, tariffs, freight rates, time tables, etc.; in fact, everything that a merchant having business relations with these countries, requires to know. It also contains a list of mercantile houses, planters and others, having trade relations with the colonies, whose headquarters are in Germany. In scope and bulk the work has been materially increased, the statistical tables of trade being notably complete.

CAOUTCHOUC ET GUTTA-PERCHA. BY E. TASSILLY. PARIS. . . . O. Doin et Fils. [Cloth, 18mo. Pp. 396. Price, 5 francs.]

PUBLISHED as part of the Encyclopedie Scientifique, issued under the direction of Dr. Toulouse, this little work is intended to give a full account of the present condition of the india rubber and gutta-percha industries. Starting with a brief historical introduction relating to the earliest use of these substances by the natives in Asia and South America, it follows the various processes, from the collection of the latex, to the ultimate manufacturing processes, referring cursorily to the chemical properties of both products, methods of analysis, etc., and while admittedly somewhat condensed, it treats the various branches of the subject concisely and comprehensively.

LE CAOUTCHOUC. PAR L. TILLIER. PREFACE DU PRINCE Pierre d'Arenberg, President of the Federation of District Automobile Clubs of France. [Paper, 8mo. Pp. 34. Price, 1 franc.]

IN his preface, Prince d'Arenberg refers to the importance to which rubber has attained, in connection with the automobile, in promoting and encouraging inter-communication. The author deals with the subject of rubber *ab ovo*, referring to the first mention of the substance by Columbus, on his return from the new world and following it up to the latest developments. Successive chapters treat of the origin and composition of caoutchouc, caoutchouc plants, their utilization, geographical distribution and cultivation, trade in rubber, rubber statistics, and industrial rubber, a number of wood cuts serving to elucidate the text.

AN ARTISTIC AND PATRIOTIC REMEMBRANCE.

FROM Calender's Cable and Construction Co., Limited (London), we have received a copy of a finely executed photogravure of the recently launched British dreadnought *Thunderer*, of which great things are expected in the way of speed and efficiency, showing her as she will appear in commission at sea.

While there is nothing about the picture to suggest an advertisement, it cannot but serve to keep in mind, the company whose enterprise, probably not altogether uninfluenced by patriotic pride, prompted its distribution, which may also have been inspired, in part, by the circumstance that the main electrical distribution, so important a factor in the operation of the modern battleship, has been effected entirely by means of Calender's cable and special boxes.

In any event, the picture is an attractive work of art and a reminder of the jealous care with which Great Britain seeks to maintain her naval supremacy as an essential factor in her commercial prosperity.

NEW INSULATED WIRE SPECIFICATIONS.

THE revised electrical rules of the Electrical Department of the city of New York were promulgated during March and take effect April 1. These new rules are much more drastic in regard to the tests applied to insulated wire than were the old ones.

Rule No. 41 provides that all tests shall apply on all wire at the time of manufacture as well as up to and including the time of installation. This rule is intended to provide against deterioration between the time of manufacture and installation. The rule also provides that the insulation must consist of rubber or other approved compounds homogeneous in character, adhering to the conductor. The thickness of the insulation for each size wire is definitely specified in the rule.

Tests for the hardness of the insulation provide that, after the braid has been removed, the insulation must be sufficiently elastic to permit all wires smaller than No. 7, to be wrapped five times around a cylinder of specified size (Nos. 8, 9 and 10 double the diameter of the wire measured over the insulation. No. 11 and smaller equal to the diameter of the wire) without injuring the insulation.

The tests for softness of insulation provides that the insulation must present sufficient resistance to crushing or tension to withstand the following to tests:

TEST A.—A sample of wire of sufficient length for test, about 20 inches, shall have the braid and insulation removed for about two inches at each end, leaving the braid and insulation on balance of sample. One end of the bare copper shall be fastened to a clamp on a shaft, and a ten-pound weight attached to the other bare copper end of the wire. The shaft shall then be revolved ten times in ten seconds, wrapping the sample in a close, even wind around the shaft. With the tension left on the sample, it shall then be immersed in water at a temperature of 60 degrees Fahrenheit for 24 hours, immediately after which time it shall, while still immersed, be subjected to 1,500 volts alternating current for one minute and shall show an insulation resistance equal to at least half that required by the test formerly provided at 100 volts.

TEST B.—Sample to be tested shall have braid carefully removed for at least one inch from one end. The wire itself shall be connected to one terminal of an electric circuit, of which a testing tool shall be the other terminal. This circuit shall have a potential of at least 100 volts alternating, or 140 volts direct current and a resistance of at least 1,000 ohms.

The portion of the wire with braid removed shall be placed on a flat surface and subjected to a pressure, vertically applied by means of the edged tool, of five pounds for fifteen minutes. The tool edge shall be sharp and the sides of the edge shall form an angle of 90 degrees with each other. During this period the tool edge, when placed transversely to the insulation shall not sink through sufficiently to touch the copper wire and complete the electric circuit.

All of the above insulations must be protected by a substantial braided covering, properly saturated with a preservative compound. This covering must be sufficiently strong to withstand all the abrasions likely to be met with in practice, and must substantially conform to approved samples by the manufacturer.

Manufacturers of rubber covered wires are particularly pleased with these new rules and predict that the effect of them will be to keep off the market inferior materials in which the insulation contains little rubber.

The City Electrician of Chicago has notified the builders and contractors of that city after April 1. No electrical work in which rubber covered wire is used will be approved in that city unless the insulation conforms to the revised specifications of the Electrical Department of New York City, as quoted above.

At the biennial meeting of the National Board of Fire Underwriters, which was held in New York March 22 and 23, changes in the specifications and rules governing rubber-covered wire were adopted. The board practically adopted the report of the electrical committee and all of the changes made were in the direction of making more drastic the regulations and more severe the tests required. For the most part the new rules of the underwriters will be identical with those, referred to above, which have been adopted by the New York Department. The tests and

requirements as to material and construction are practically the same. The tables for the thickness of insulation on the various sizes of wire are the same.

The rule for testing the insulation reads:

Any one foot sample of completed covering must show a dielectric strength sufficient to resist throughout five minutes the application of an electro motive force proportionate to the thickness of insulation (according to a definite table specified in the rule). * * * The application of the electro motive force shall first be made at 3,000 volts (alternating current) for five minutes, then the voltage increased by steps of not over 3,000 volts, each held for five minutes, until the rupture of the insulation occurs. The test for dielectric strength shall be made on a sample wire which has been immersed in water for seventy-two hours. One foot of the wire under test is to be immersed in a conducting liquid held in a metal trough, one of the transformer terminals being connected to the copper of the wire and the other to the metal of the trough.

The rules provide that every length of completed wire or cable must be tested after not less than twelve hours immersion, and while still immersed, by the application for one minute of an alternating current of a voltage graded according to the size of the wire (as provided in the tables). Any length of completed wire may be tested after 30 days' immersion, and must show not less than 50 per cent. of the insulation resistance required after twelve hours' immersion. The results of the insulation tests at different temperatures are to be reduced to a basis of 60 degrees F. by using standard multipliers which are provided in the rules.

The tests for softness and for elasticity are practically the same as those referred to above as having been adopted by the New York Department.

A new rule has been added to the series of tests, which reads as follows:

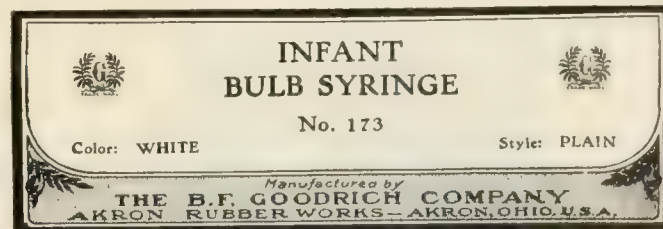
41. J.—Five chemical tests shall be made of the rubber compound as follows: Acetone extract, alcoholic potash extract, chloroform extract ash and total sulphur. The sum total of the results of these five tests shall not exceed 80 per cent. by weight of the total compound—tests to be made according to Underwriters' Laboratories Specifications.

The ash test shall be supplemented by tests to determine the quality of substances, other than vulcanized rubber, which are combustible, but not soluble in acetone, alcoholic potash or chloroform, and any such substances shall be counted as ash.

These new rules will probably be promulgated in April, but will not go into effect for five or six months in order to give manufacturers an opportunity to dispose of their present stocks.

LABELS FOR DRUGGISTS' SUNDRIES.

THE drug and surgical department of The B. F. Goodrich Co. (Akron, Ohio) has adopted a uniform style of label to be used in future. This is a design effect with stippled border at the bottom to show the Goodrich name and address, with a heavy



THE GOODRICH UNIFORM DRUGGISTS' SUNDRIES LABEL.

line border at top and sides. Ample space is provided for featuring the particular goods involved. The general color scheme will be lettering in black on a white background, although some exceptions will probably be made. The size and shape of label will necessarily vary to conform to the different styles and sizes of boxes employed, but in each case the general design effect will be maintained. The object for which they are striving is to provide a means of ready identification of Goodrich goods to the buyer at large. It is not known that this idea has ever been followed out before in so complete a manner, and doubtless it will be regarded with considerable interest in the trade.

"RUBBER Tires and All About Them"—a book for everybody who has to do with tires.

New Rubber Goods in the Market.

SLEEVE FOR WEAK TIRES.

THE "IDEAL TWIN" Sleeve, illustrated, is designed to provide against blowouts or rim cuts in automobile casings.

It consists of an inner sleeve, which fits the inside of the casing, and is set in place inside the shoe, pulling both flaps out under the beads of the casing. The outer "twin" is carried up over the shoe, placing the flap underneath the bead and between the casing and the inner "twin," the lap of the inside "twin" be-



IDEAL TWIN SLEEVE.

ing brought over the bead. The casing is then replaced on the wheel, just as though no repair had been made.

The sleeves are made from the highest grade of cotton duck, from 15 to seven plies, according to size, with beveled edges to insure a smooth surface for the tube. They have a flap on each side that passes over the rim and holds the sleeve in place, and when adjusted it is claimed that they take the strain entirely off the shoe, making them invaluable where a weak spot develops on the shoe. [Voorhees Rubber Manufacturing Co., New York.]

CLAMP FOR AUTO HOSE.

THIS clamp was designed to insure perfect circulation in the cooling system of automobiles, by fitting with equal pressure at every point in the circumference of the hose. It is stamped from sheet brass, and when used is wrapped around the hose twice, the openings on each side of the clamp meshing with each other, and kept in position by small lugs as shown in cut. A



CLAMP FOR AUTO HOSE.

T-bolt, hinged as shown with wing nut is dropped through the slot in the opposite side, the bolt being kept from coming out by the cup-like formation of this end. [Thomas. B. Reid, Morristown, New Jersey.]

THE "JELCO" PUNCTURE-PROOF TIRE.

A TIRE that combines, with puncture-proof qualities, all the life and resiliency possessed by the best rubber tires of the past, was the object aimed at by the origination of the "Jelco" puncture-proof tire. In seeking to attain it, the ordinary rubber tire was reinforced by a layer of rubber, in which steel discs are



JELCO PUNCTURE PROOF TIRE.

imbedded in alternate layers, overlapping one another without touching each other. The principle will be readily understood from the accompanying illustration, in which the location and arrangement of the discs is clearly shown, as well as the manner in which they protect the air chamber from nails and other pointed bodies that may perforate the shoe, and which, in the tire of ordinary construction, would have resulted in an inevitable puncture. [J. Ellwood Lee Co., Conshohocken, Pennsylvania.]

TIRE INFLATION MADE EASY.

THE LABOR of pumping up a tire, often with a pump ridiculously inadequate for the work, is avoided by the smart automobilist who makes use, in place of the pump, of the Goodyear Air Bottle. A small steel tank, charged with compressed air, it can be stowed under the seat or strapped to the foot-board. When



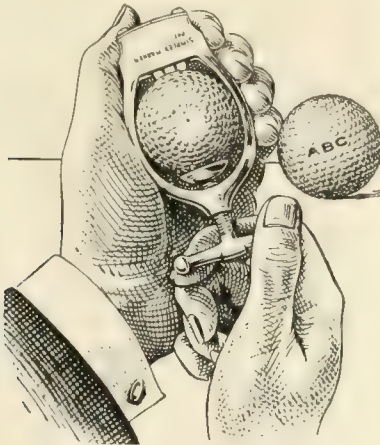
THE GOODYEAR AIR BOTTLE.

a tire needs inflating, all that is necessary is to attach the hose to the tire valve, turn on the air, and in a few moments the tire is blown up. A pressure gauge on the tank tells when the tire is properly inflated, a very important point in obtaining full ser-

vice from tires, and a table published by the manufacturers tells just what pressure each size Goodyear tire requires to do its best. The number of tires a bottle will fill varies from thirty-five 3-inch to seven 5-inch. The gauge can be set to the desired pressure, and when this is attained the air shuts off automatically. When the bottle is empty it can be exchanged for a full one at any Goodyear branch east of the Mississippi for \$1; west of the Mississippi for \$1.25. Who would take the trouble to pump up a tire or run the risks involved by running on inadequately filled tires, when for so small an outlay they can be avoided? [Goodyear Tire and Rubber Co., Akron, Ohio.]

GOLF BALL IDENTIFICATION.

THE handy little contrivance illustrated herewith, which is marketed as the Simplex Golf Ball Marker, meets a requirement that every golf player recognizes, i. e.: a certain means of identifying balls on the links. Small enough to be carried in the vest



SIMPLEX GOLF BALL MARKER.

pocket, it indelibly stamps the ball with the owner's name, the operation being practically instantaneous, and it thus obviates all cause for dispute as to their ownership and confusion. It is meeting with a good demand from dealers in sporting goods. [Powers & Armstrong Co., Philadelphia, Pennsylvania.]

THE GERALDINE—A NEW HIGH-CUT RUBBER.

A NEW, high-cut rubber is illustrated herewith.

It will be noted that on the back of this rubber are a number of vertical ribs, which form gutters, down which mud and slush, that usually accumulates on the back of the rubber and causes the soiling of skirts, etc., is caused to run, thus keeping the back of the rubber, as well as the bottom of the skirts, clean.



THE GERALDINE HIGH-CUT RUBBER.

The ribs also impart additional strength to the back of the rubbers, an important consideration in view of the strain imposed on them by the high heels so generally worn on shoes at present, and, besides this, there is a friction stay that comes forward from the back of the heel for about two inches along the top, which by reducing the elasticity of the rubber at this point and preventing it stretching too easily, gives it a firmer hold on the foot.

The rubber is also made in croquet shape, under the name of Ideal. [Hood Rubber Co., Boston, Massachusetts.]

THE HANDY HOSE HOLDER.

A LABOR saving device that the owner of a goodly stretch of lawn will especially appreciate, is the Handy Hose Holder, illustrated herewith. The sharp end is forced into the ground, and the nozzle, set to spray, is clamped by means of a set screw in



THE HANDY HOSE HOLDER.

any desired position, to cover the largest area practicable. With this device it is not necessary to remove the nozzle from the hose in order to sprinkle the lawn, and the tiresome standing, holding the nozzle and accompanying dampness are alike avoided. The device is strongly made of steel, black enamelled. [T. C. Prouty, Albion, Michigan.]

TRAVELIGHT PATENT CLUB BAGS.

As a substitute for the leather bags and travelling kits, in which the heavy leather receptacle makes up the greater portion of the weight transported, the "Travelight" patent bags have been placed on the market, made of the best fibre matting, woven cane or Scotch plaid rubber cloth, without the heavy iron frames, etc., that rust out and add so greatly to the weight; they weigh only about one-fourth as much as the leather baggage, are of greater capacity and more durable.



BAG IN PLAID RUBBER CLOTH.

The accompanying illustration shows a Travelight bag in Scotch plaid rubber cloth, with strong leather gussets and corners, covered handle and leather trim all round; brass lock and catches. The size of this bag is 15 x 10 x 8 inches, its weight about two pounds. It is water-proof, very stylish in appearance and costs much less than a leather bag of the same size. A larger size, in the same style, is also made; the bags in fibre matting and woven cane are equally attractive in appearance and fully as durable, and suit cases, animal bags for transporting dogs and cats, etc., school bags, etc., are made of like material in attractive styles. [Herman Loeb & Co., Philadelphia, Pennsylvania.]

A RUBBER SHOE FOR THE RHINO TOE.

The accompanying illustration shows a rubber shoe adapted to the modified form of the new style "rhino" toe, that promises to be the ultra-fashionable foot-covering for the opening sea-

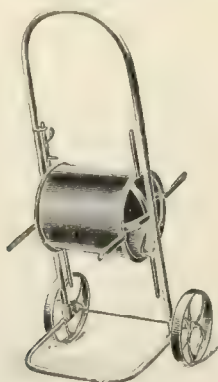


RHINO TOE RUBBER.

son. Some of the styles in leather shoes display the "rhino" effect in much more "extreme" style than the rubber shown herewith indicates. Whether the manufacturers will follow this new fad in footwear to its furthest limit, remains to be seen. [Boston Rubber Shoe Co., Boston, Massachusetts.]

ALL METAL HOSE REELS.

PROPER care will prolong the life of a garden hose almost indefinitely and the customary one or two seasons' wear is increased by several years. The tubular all-metal hose reels are a most important aid in properly caring for hose. Made wholly of



W. & K. ALL METAL HOSE REEL.

metal, they do not dry and drop to pieces, warp or rot, while their tubular construction makes them light and convenient to handle. Hose reeled on one of these contrivances is drained in reeling, not kinked or strained and when reeled up can be wheeled into a shady place, thus fulfilling all the conditions essential to its preservation. The accompanying illustration shows the W. & K. No. 2 all metal reel, made with tubular frame, and nine-inch drum of extra heavy sheet steel with solid steel arms, its capacity being 100 feet of $\frac{3}{4}$ -inch hose. Bundled for shipping it weighs 15 pounds [Wirt & Knox Manufacturing Co., Philadelphia, Pennsylvania].

SOME IDEA OF THE SERVICE EXPECTED from the tires with which modern fire-fighting apparatus is equipped may be obtained from statistics published, in regard to the new motor-propelled steam fire engine, recently supplied to the New York Fire Department by the Nott Fire Engine Co., Minneapolis, Minn. This powerful machine, which develops 100 horse-power on brake test and can maintain a speed of 35 miles an hour, weighs, when loaded, approximately 16,000 pounds. The tires with which it is equipped, made by the Diamond Rubber Co. (Akron, Ohio), are of the solid pattern. The machine is twenty feet long, over all, and the wheels set almost at each end, and at high speed, over the not always too smooth pavements of New York, there will be much jolting. The engine was recently subjected by the Fire Commissioner to a severe practical test, which, both as to travelling and pumping, it very successfully withstood.

PROGRESS OF RUBBER PLANTING.

A YEAR'S RUBBER PLANTATION PROFITS—325%.

THE accounts prepared for the eighth annual meeting of the Potaling Rubber Estates Syndicate, held in London, March 30, are a revelation as to the productiveness of a favorably located and well managed Hevea rubber plantation. The net profits of the property amounting to 2,205 acres, of which 1,467.2 are under cultivation to rubber and planted in Hevea, with a balance forward from 1909, were £84,620. After paying £45,000 in interim dividends of 50.75 and 75 per cent., the sum of £39,620 remained, from which the directors recommended the payment of a final dividend of 125 per cent., making a total distribution of 325 per cent. for the year and leaving a balance of £6,459 9s. 11d. to be carried forward. The following table gives a summary of the results of the company's business for the past five years.

	1906.	1907.	1908.	1909.	1910.
Yield (pounds)....	43,310	58,064	80,922	152,090	323,065
Selling price, net ..	5s. 1 7/8 d.	3s. 8 1/2 d.	4s. 3 1/2 d.	5s. 1 1/4 d.	6s. 2 1/4 d.
Equivalent to.....	\$1.24 3/4	\$0.89 3/4	\$1.05	\$1.44	\$1.51
Dividends.....	40%	35%	45%	125%	325%

The large profits can be the more readily understood, when it is explained that the total cost of production, f. o. b. Port Swettenham, for shipment to Europe, was figured at one shilling [24.33 cents] per pound. The manager estimates the crop of rubber for the current year at 382,000 pounds.

A GOOD YEAR FOR GOLDEN HOPE RUBBER ESTATE.

The directors of the Golden Hope Rubber Estate Limited presented, at the annual meeting of that corporation, held in London on March 30, a report from which we take the following figures. The company has a property of 897 acres, of which 823 acres are planted in Hevea rubber. Prior to this year 30 acres were planted to Rambong, but this has all been cut out and replaced with Pará rubber. The following comparative statement covering four years, will prove of interest.

	1907.	1908.	1909.	1910.
Yield (pounds) ..	5,591	14,075	51,420	81,000
Selling price, net ..	3s. 7 1/2 d.	4s. 3 1/2 d.	6s. 7 d.	5s. 9 1/4 d.
Equivalent to ..	\$0.885	\$1.044	\$1.590	\$1.387
Dividends ..	6%	8%	30%	40%

The directors report the cutting out of all coffee growing amongst rubber, and it is now proposed to replant the acreage on which coffee is grown alone, with Hevea rubber. The cost of producing the rubber, delivered f. o. b. at Port Swettenham, was 1s. 0 3/4 d. [25.08 cents] per pound, and the crop for the current year is estimated at 114,240 pounds.

SELABA RUBBER ESTATES, LIMITED.

At the first annual general meeting of the Selaba Rubber Estates, Limited, held in London on March 30, the directors presented a report covering the fifteen months ended December 31, 1911, from which it appears that the total rubber collected amounted to 91,869 pounds, for which an average price of 6s. 5d. per pound was realized. The total cost of production, f. o. b. Teluk Anson, was just over 1s. 7d. (= 38.51 cents) per pound. The net profits amounted to £19,502 1s. 8d. An interim dividend of 5 per cent., paid in October, consumed £5,250, leaving £14,252 1s. 8d. available for distribution. From this the directors recommended the payment of a final dividend of 12 1/2 per cent., making 17 1/2 per cent. for the fifteen months, and leaving £1,127 1s. 8d. to be carried forward. The yield of rubber for 1911 is estimated by the manager at 175,000 pounds.

MR. HAROLD HAMEL SMITH, the editor of *Tropical Life*, of London, is bringing out a book on "Soil and Plant Sanitation on Cacao and Rubber Estates," which, in view of his familiarity with the subjects covered promises to be a work of no little practical value. It embraces special articles and supplementary notes by a number of authorities on tropical planting, including Mr. John Hinchley Hart, F. L. S., who was so long at the head of the botanical department of Trinidad.

THE RUBBER TRADE AT AKRON.

BY A RESIDENT CORRESPONDENT.

THE B. F. GOODRICH CO., by the purchase of 158 feet on South Main street, with a depth of 191 feet on Cedar street, secures a continuous frontage of 1,500 feet on South Main street, from Falor to Cedar, and on the canal from Falor to West Exchange street, a frontage of 2,000 feet. They will shortly remodel the building occupied by their branch office in Philadelphia. The B. F. Goodrich Co. held its annual conference of branch managers in this city last month. About a hundred of these active business men gathered in the company's main offices, heard reports from their colleagues, discussed plans for increasing the business, etc. The visiting managers were subsequently entertained at a banquet.

* * *

The Republic Rubber Co. has almost completed, at Youngstown, O., a new five-story factory building. Their tire department will occupy the first and second floors, the cotton hose department the third, on the fourth will be the airbrake department, and the rubber hose department will occupy the fifth floor.

* * *

The Firestone Tire and Rubber Co. have recently completed the rebuilding of their new cement mixing building, in which new machinery has been installed. The company has lately added the following new branches to its distributing stations: 2127 Farnum street, Omaha, Neb., where George A. Martin is in charge; 165 Division street, Grand Rapids, Mich., in charge of the Grand Rapids Vulcanizing Co.; Chattanooga, Tenn., in charge of the Chattanooga Rubber Tire Works; Newark, N. J., at 6 Branford Place, in charge of The Rubber Shop, and a new Firestone service depot, in Washington, D. C., at 1736 Fourteenth street, N. W., with "Meeley the Tire Man."

* * *

The Swinehart Tire and Rubber Co. recently issued \$100,000 worth of stock, all of which has been subscribed. They have opened two more branches, one on Euclid avenue, Cleveland, Ohio, in charge of M. J. O'Connor, and one in Detroit, Mich., of which S. T. Andrews has charge.

* * *

The Portage Rubber Co., manufacturing tires and molded mechanical rubber goods, will erect, this summer, two new buildings near the present reclaiming plant at Barberton, Ohio, one of which will be 90 x 150 feet and two stories high. A quarterly dividend of 1¼ per cent. on the preferred stock, payable April 1, has lately been declared out of the earnings of the reclaiming plant. The annual stockholders' meeting of the company was held on March 6. The directors elected are James Christy, J. W. Miller, John Kerch, Hon. Dayton A. Doyle, M. S. Long, James D. Raw, A. S. Mottinger and W. W. Wildman. The officers elected are as follows:

President, JAMES CHRISTY.
 Vice President, J. W. MILLER.
 Treasurer, ARTHUR S. MOTTINGER.
 Secretary, GILLEM H. DOOLITTLE.
 General Manager, W. W. WILDMAN.

* * *

The Biggs Boiler Works, manufacturing rubber machinery, contemplate the erection of a large building, to be equipped with new and improved machinery which their increasing business makes necessary.

C. F. Adamson, a mechanical rubber engineer of Akron, has entered into partnership with M. C. McCormick.

* * *

THE Goodyear Tire & Rubber Co. have recently completed additions to their manufacturing facilities, which, with the volume of orders on hand, will necessitate the employment of some 1,500 more men and 600 more girls who are now being

recruited at different points. They expect to increase their daily tire output to 3,000. The added buildings include a power-house, with engines of 120 horsepower, and a 250-foot stack of 12 feet interior diameter. Six new 700-horsepower boilers have been added to the former steam generating outfit. Among the contracts on the company's order book are 10,000 waterproof boxes for the Ohio National Guard, aeroplane material (including cover bumpers, shock absorbers, tires for alighting wheels and waterproof fabric) for the Wright Bros. and Glenn Curtis, and balloon material for Captain Baldwin.

The Diamond Rubber Co. expect to enlarge their spacious automobile garage this summer. The company has been extensively congratulated on the success of the advertising scheme it used at the Boston Automobile Show—an aeroplane, held up in the air by three kites, with a dummy in the seat and a propeller that revolved. It looked as though moving, and deceived all who were not in the secret. The company's branch at Philadelphia, Pennsylvania, will shortly move into the first four stories of a new eight-story building, at Spring Garden and Broad streets. E. H. Fitch will be in charge, with R. McTamany as chief clerk.

* * *

The following statistics, from the year book of the Akron Chamber of Commerce, will give some idea of the importance of the city and of the magnitude of the rubber interest, to which it is so largely due:

Population, United States census 1910	69,067
Area, square miles	11.48
Miles of paved streets	70
Miles of sewers	115
Acreage of parks	103.37
Aggregate bank deposits, Nov. 1, 1910	11,113,625
Gain over previous year	9%
Postoffice receipts, Oct. 1, 1909—Oct. 1, 1910	325,974
Increase over previous year	25%
Bank clearings, Nov. 1, 1909—Nov. 1, 1910	49,855,000
Increase over previous year	37%
Increase in building permits, 1910 over 1909	83%
Increase in real estate transfers, 1910 over 1909	106%
105 factories with aggregate capital of \$75,142,000 give employment to 23,450 employees.	

AKRON'S RUBBER INDUSTRY.

Firm.	Established.	Capital.	Employees.
B. F. Goodrich Rubber	1869	\$20,000,000	5,000
Diamond Rubber	1894	10,000,000	4,500
Goodyear Tire & Rubber	1898	4,000,000	1,700
Firestone Tire & Rubber	1900	4,000,000	900
American Hard Rubber		2,500,000	300
Swinehart Tire & Rubber	1904	400,000	150
Buckeye Rubber	1900	209,000	225
Miller Rubber	1904	500,000	300
Alkali Rubber	1904	1,000,000	350
Star Rubber	1907	250,000	125
Royal Rubber	1909	200,000	15
American Tire & Rubber	1910	200,000	15
Standard Rubber	1901	50,000	
Motz Tire & Rubber	1905	50,000	6
Lyon Rubber	1904	15,000	15
Federal Waterproofing Co.		100,000	
		\$43,674,000	13,601

THE RUBBER TRADE IN SAN FRANCISCO.

BY A RESIDENT CORRESPONDENT.

CONTINUOUS rains during the past month, while they helped dealers in rainproof goods, somewhat, had an adverse effect on business in other lines, even factories running short handed, and the sales of mechanical rubber goods being restricted. With the advent of bright weather, an improvement has set in and good spring business is now anticipated.

The call for bids on 10,000 feet of fire hose, made by the fire commissioners of this city, promised at first to interest the dealers and manufacturers' representatives here. The nature of the specifications, however, served to cool their ardor. They go minutely into every detail of manufacture, even to number and quality of threads in the fabric, the quantity of pure rubber, which must be 50 per cent. and other items. If these require-

ments are filled, the makers must also give a guarantee that the hose will stand high-pressure and other tests at the end of two or three years. The only company that was willing to comply with all these requirements and made an unrestricted bid, put their price at 85 cents to \$1.15, and, as this is very high, it is believed that the bids will be re-advertised, possibly in modified form.

* * *

The Plant Rubber and Supply Co., which bought the presses, etc., formerly owned by the Barton Packing and Rubber Co., expect to have their plant in operation by April 1. It will be in charge of Mr. Whitehead, formerly superintendent of the Barton factory.

* * *

President Edward R. Rice, of the United States Rubber Co. (New York) and L. J. Gervin, a rubber merchant of Los Angeles, were recent visitors in San Francisco.

* * *

A new branch has been opened by the Diamond Rubber Co. (Akron, Ohio), at Fresno, California, where they have taken a store with 5,000 feet of floor space. The company's general manager on the Pacific Coast, C. E. Mathewson, paid a recent visit to Los Angeles, California, to select a building for a branch in that city.

* * *

F. S. Winslow, who had charge of the Pacific Coast Rubber Company, has been engaged by the Gorham-Revere Rubber Co., who have taken over the Pacific Coast Company's stock. This does not include their stock in the Northwest, as they are a separate concern there. The Gorham-Revere Rubber Co. expects to instal a new store in Portland, Ore., and to double the capacity of their Seattle branch.

* * *

M. E. Murray, who comes to this city for the purpose of assuming the management of the Republic Rubber Co.'s affairs on the Pacific Coast, is here, and will make his headquarters at their San Francisco branch, the Phoenix Rubber Co.

* * *

The purchasers of the factory department of the Phoenix Rubber Co. will maintain the factory on First street, near Howard. They have named their concern the Panama Rubber Co.

* * *

The B. F. Goodrich Co. (Akron, Ohio), have secured the services of Carl Webb, formerly with the Pacific Coast Rubber Co. He will have his headquarters at Los Angeles and represent them in the southern portion of the State.

THE RUBBER TRADE AT TRENTON.

BY A RESIDENT CORRESPONDENT.

TRADE conditions generally are unchanged; mechanical mills report fair volume of business; tires, drug sundries and specialties good; insulated wire less active.

Thermoid Rubber Co. continue busy; mechanical and tire departments reported working nights.

The Empire Rubber Manufacturing Co., working five nights weekly, have business on hand that warrants continuation of this activity. Hereafter, they will manufacture Peerless Red Inner Tubes, to the exclusion of the grey. The standard gauge tube will be known as "Standard," the extra heavy as "Peerless," as heretofore.

The Whitehead Brothers' Rubber Co. made a "hit" with their glazed cotton covered vacuum hose and the sales, which have already attained large proportions, are steadily increasing. They have put on an automobile to carry their office help to and from business. Their recent completion of a 200-foot fireproof warehouse is further indication of their progressiveness.

The Mercer Rubber Co., working three nights a week, report prospects for future business good.

Essex Rubber Co., Inc., who until recently manufactured only

specialties and have now added a full line of sheet packings, report the last four weeks' business the best they have ever had.

The wedding of Miss Hamill and Mr. Bruce Bedford, of the Luzerne Rubber Co., in February, was one of the season's social events. The newly-married couple went on a bridal trip to Bermuda.

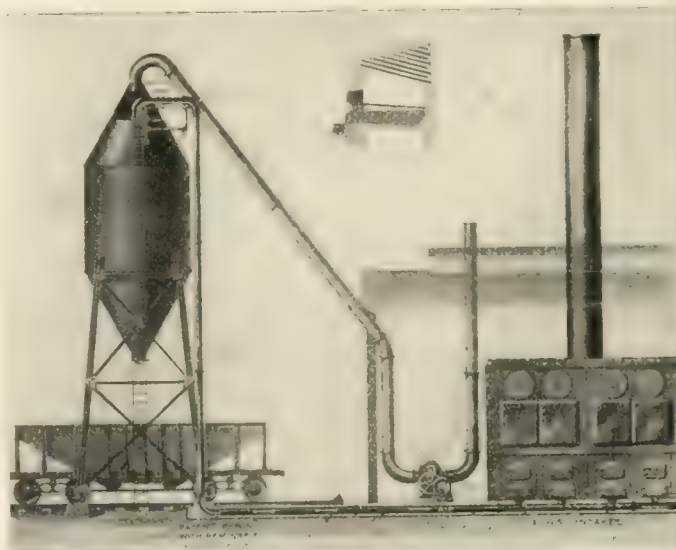
The return of Mr. Harry L. Boyer, of the Joseph Stokes Rubber Co., and family, from Florida, is a reminder that some people have the happy faculty of being able to combine business with pleasure.

Frederick R. Sayen, secretary of the Mercer Rubber Co., who, on finishing his course at Haverford, elected to travel in place of entering another college, recently addressed the Republican club of this city on the subject of his visit to the Panama Canal. Though but twenty-six years of age, he is a fluent and interesting speaker.

A contract worthy of note was the recent order of the Timken Detroit Axle Co. for 400,000 feet of Autobestine Break Liner, manufactured by the Woven Steel Hose and Rubber Co. This is a specialty of Trenton origin that has "caught on" with the automobilists.

AN AUTOMATIC ASH REMOVER.

VACUUM cleaners for homes, hotels and offices are so common and so widely accepted as to cause no comment. That a principal analogous to that used in vacuum cleaning should be applied to the removal of ashes from beneath boilers in great manufacturing plants will, however, strike many as a novelty.



DARLEY SUCTION ASH CONVEYOR.

The system which has already been adopted by certain rubber manufacturers, is known as the Patented Suction Conveyor System and is installed by the Darley Engineering Co., of New York.

Described briefly it consists of an iron conveyor pipe, six, eight or ten inches in diameter, which runs from beneath the boiler fronts to an elevated storage tank. Other parts are: a separator, an exhaustor, and a water jet. The separator, which is really a storage tank also, has a discharge gate at its lower end for dumping into cars, which may be run directly beneath it.

The exhaustor may be a simple exhaust fan or a blower, and is either steam or motor driven. Just before entering the separator a water jet sprays the material that is being removed; cools it and settles all dust.

The system is very simple, can be adapted to any plant, and will handle from 200 to 500 pounds of ashes per minute.

News of the American Rubber Trade.

NEW YORK RUBBER CO.—A PRESENTATION.

THE officers and office staff of the New York Rubber Co., New York and Matteawan, New York, united in the presentation, on March 1, to the former president of the company, Mr. John P. Rider, of a loving cup, suitably inscribed, as a token of appreciation of his friendly feeling and uniform kindness towards those with whom he had been associated in the past. Mr. Rider in accepting the gift, made a felicitous speech in which he manifested with feeling his appreciation alike of the beautiful cup and of the sentiments that prompted its presentation.

INTERCONTINENTAL RUBBER COMPANY: DIVIDEND.

ANNOUNCEMENT is made that the directors of the Intercontinental Rubber Co. (New York), have declared the regular quarterly dividend of $1\frac{3}{4}$ per cent. on the preferred shares, payable March 31, 1911, to stockholders of record March 20. The directors also declared a dividend of 1 per cent. on the common stock of the company, payable May 1, 1911 to holders of common stock of record at 3 p. m. on Friday, April 21. The last named distribution was stated to be not a quarterly dividend, but a dividend paid because the earnings of the company justified it, in accordance with the policy of the directors to make a distribution whenever the earnings and conditions of the company warranted it.

REPUBLIC RUBBER CO.

THE Republic Rubber Co., Youngstown, O., have opened a branch establishment at 126 West Sixth street, St. Paul, Minn., under the management of M. F. W. Osmun, in connection with which they have installed a completely equipped repair department. At 1514 Hennepin avenue, Minneapolis, they have established a branch sales room, in charge of which is Mr. Fred Weil, formerly north-western representative for the Excelsior Supply Co., of Chicago. In view of the growing importance of the twin cities as an automobile trade center, both branches will carry a full line of the company's goods, including their Republic "Stag-gard" Tread and Republic Motor Truck Tires.

RUBBER GOODS MANUFACTURING CO. DIVIDEND.

At a meeting of the board of directors of the Rubber Goods Manufacturing Co. (New York), the forty-eighth regular quarterly dividend of $1\frac{3}{4}$ per cent. was declared on preferred stock, payable to stockholders of record at 3 p. m., March 10. On March 25 the company paid a 2 per cent. dividend on its common stock. The next annual meeting of the company will be held in Jersey City, on April 13.

MIEGEL RUBBER MANUFACTURING CO.

THE Miegel Rubber Manufacturing Co. (Stamford, Connecticut), the incorporation of which was announced in the March 1 number of THE INDIA RUBBER WORLD, will engage in the manufacture of a pneumatic tire for automobiles, of an entirely new type of construction, also in the manufacture of mechanical and surgical rubber goods, some new, some of improved design, and will deal in all kinds of automobile accessories, including a full line of everything used by the automobilist. The officers of the company are as follows:

President—CHARLES W. MIEGEL.
Vice President—CHARLES L. THOMPSON.
Secretary and Treasurer—WILLIAM T. DE WATERS.

ALLING RUBBER CO.

THE Alling Rubber Co. (Troy, New York), dealing in rubber goods of every description, including sporting goods and automobile tires, have leased the store and basement at 101 North Pearl street, Albany, New York, for a term of five years, and will conduct a general rubber business there.

CANADIAN CONSOLIDATED—ANNUAL.

IN HIS annual address to the shareholders, at the yearly meeting, President D. Lorne McGibbon, of the above company, reported a satisfactory business for the past twelve months, both as to sales of general rubber goods and footwear and profits earned. The net income for the year amounted to \$583,243.39, compared with \$573,319 for the preceding year, and after payment of interest on bonds and dividends on stocks, to the amount of \$402,499.75, there was left \$180,743.64 to be added to the surplus account, which now amounts to \$257,444.08.

The president reported that in order to meet the demands of the retail trade that they be allowed to purchase direct from the manufacturer, arrangements have been effected whereby the main company will act as selling agents of all the rubber and felt companies controlled by it. The arrangements thus made, will concentrate the selling staffs of the subsidiary companies under one general organization and advance the work of economic consolidation of purchasing, manufacturing and selling.

Following are the directors elected at the annual meeting: D. Lorne McGibbon, Geo. W. Stephens, J. H. McKechnie, T. H. Rieder, F. H. Ward, Shirley Ogilvie, D. Coulson, E. W. Nesbitt, S. P. Colt, Alex. Pringle, W. R. Allan, V. E. Mitchell, Homer E. Sawyer, E. S. Williams and E. R. Rice. The directors elected officers, as follows:

President—D. LORNE MCGIBBON.
First Vice President—GEO. W. STEPHENS.
Second Vice President—J. H. MCKECHNIE.
Secretary-Treasurer—WALTER BINMORE.
Assistant Treasurer—LEONARD D. SHAW.
Assistant Secretary—C. H. ANCRUM.

THE SWINEHART TIRE AND RUBBER CO. IN NEW QUARTERS.

THE Swinehart Tire and Rubber Co., of New York, have moved into their new salesrooms at No. 1924 Broadway, that city. Their improved accommodations will enable them to carry a complete line of Swinehart pneumatic and solid tires, and their friends and patrons are invited to visit them in their new quarters.

NEW BOSTON HEADQUARTERS FOR THE FISK RUBBER CO.

THE Boston branch of the Fisk Rubber Co. (Chicopee Falls, Massachusetts), is now installed in the new Fisk building at Nos. 811-813 Boylston street, Boston. The handsome five-story structure, which is an attractive addition to Boston's automobile row, has a frontage of 30 feet and is 100 feet deep, with a facade of pressed brick with terra cotta trim.

In the basement, which is the full extent of the building, is the shipping and receiving department, with storage accommodations, including racks for 4,000 tires. The general offices and salesroom, occupying the ground floor, are sumptuously fitted in polished oak and plate glass and on the top floor is a completely equipped repair department, with facilities for perfectly repairing tires of every make. All departments are connected by freight and passenger elevators.

The new building is a notable addition to Boston's modern business edifices, and as to convenience and architectural beauty, takes a foremost place among the twenty-three branch establishments the Fisk Rubber Co. maintain in leading cities throughout the country.

MOTOR TRUCKS THAT MADE GOOD.

THE United States Tire Co. (New York), made practical use of the motor truck, on a recent occasion, when a consignment of 500 tire casings, destined for New York and needed to fill orders, were stalled at their plant at Hartford, Conn., owing to a strike of expressmen. It occurred to President J. D. Anderson, that motor trucks might be pressed into service to transport them

and Superintendent Charles B. Whittlesey undertook the job. A five-ton Mack truck and a big Auto-car truck were loaded for the journey and led by Mr. Whittlesey, in a pilot car, started at 8 p. m. on the 127-mile run to New York. All that night, all next day and the next night, the heavy trucks plowed and wallowed through the mud, four hours being consumed in negotiating the roads of one town in New York State, but at three o'clock on the second morning after leaving Hartford, the ponderous vehicles arrived safely at their destination, covered with mud, but with their freight in good shape and on time for filling the orders.

THEODORE HOFELLER & CO.

The co-partnership between Theodore Hofeller and Julius Hofeller, doing business under the firm name of Theodore Hofeller & Co., at Buffalo, New York, as dealers in scrap rubber, metals, etc., has been dissolved by mutual consent. The business will be continued by Theodore Hofeller and his son Eugene D. Hofeller, at the present address, Nos. 206-226 Scott street, and will be incorporated under the name of Theodore Hofeller & Co. with a capital of \$200,000. Theodore Hofeller will be president and Eugene D. Hofeller, secretary and treasurer of the new company.

PERSONAL MENTION.

Charles C. Measure, for three years past branch manager in New York for the Goodyear Tire and Rubber Co., has gone to the factory at Akron and is succeeded by John B. Maus.

Byron C. Dowse, for the past 3½ years president of the G & J Tire Co. (Indianapolis, Indiana), resigned as head of that corporation on March 10. As far back as 1899, when the Rubber Goods Manufacturing Co. acquired the Indianapolis plant and marketed tires under the G & J patents, Mr. Dowse had been actively connected with the concern, and prior to this, for four years, he was selling representative of the Gormully & Jeffery Manufacturing Co., Chicago. He acted for a number of years as general representative of the company, and in 1894, when the G & J Chicago branch was opened, he became its manager, taking entire charge of the sales department for the Middle West. In 1907 he was called to Indianapolis to assume the presidency of the company. That his administration has been a successful one is proved by the fact that during the three years of his presidency the Indianapolis plant has more than doubled in capacity, while during the same period the sales of its product have increased upwards of 300 per cent. Mr. Dowse takes with him, in his retirement, the sincere good wishes of his former colleagues, while his many friends in the trade will be pleased to hear of his success in any undertaking into which he may, in future, enter.

Roy L. Dorr, after ten years' service with the United States Rubber Co. (New York), has resigned to become New York representative of Fairbanks & Dorr, woolen manufacturers, who have a very large and prosperous plant in Newport, N. H. In 1901, Mr. Dorr joined the Boston Rubber Shoe Co., as assistant to the purchasing agent, Mr. Yeomans. Two years later, Mr. Yeomans, having been in the meantime transferred to the New York office of the United States Rubber Co., Mr. Dorr became purchasing agent for the Boston Rubber Shoe Co., and retained that position until 1908, when he was likewise transferred to the New York office of the United States Rubber Co., where he assumed charge of the rubber supply for the company's factories, filling the duties of the position very satisfactorily. Mr. Dorr, who is one of the most popular of the young men of late identified with the rubber trade, takes with him, to his new field, the universal good wishes of his associates.

C. J. Bailey, of C. J. Bailey & Co. (Boston, Massachusetts), manufacturers, jobbers and retailers of rubber goods generally, and originators of Bailey's famous rubber brushes, is making an extended trip through the West Indies and Central America, which will include Jamaica, Colombia and the Canal zone.

UNITED STATES RUBBER CO.'S ISSUES.

TRANSACTIONS on the New York Stock Exchange for five weeks ending March 25:

COMMON STOCK, \$25,000,000.

[The treasury of a subsidiary company holds \$1,334,000.]

Last Dividend, April 30, 1900—1½¢.

Week February 25	Sales 16,594 shares	High 46	Low 43
Week March 4	Sales 53,430 shares	High 47 ½	Low 39
Week March 11	Sales 1,825 shares	High 42	Low 39½
Week March 18	Sales 13,750 shares	High 43¾	Low 41
Week March 25	Sales 13,550 shares	High 44½	Low 42

For the year—High, 47½, March 1; Low, 36, Jan. 6.
Last year—High, 52½, Low, 27.

FIRST PREFERRED STOCK, \$39,824,400.

Last Dividend, January 31, 1911—2½¢.

Week February 25	Sales 2,540 shares	High 113¾	Low 112
Week March 4	Sales 1,710 shares	High 114½	Low 112
Week March 11	Sales 200 shares	High 112	Low 112
Week March 18	Sales 1,100 shares	High 113	Low 112
Week March 25	Sales 220 shares	High 113	Low 112½

For the year—High, 114½, March 1; Low, 109½, Jan. 18.
Last year—High, 116½, Low, 99.

SECOND PREFERRED STOCK, \$9,965,000.

Last Dividend, January 31, 1911—1½¢.

Week February 25	Sales 2,400 shares	High 78	Low 76½
Week March 4	Sales 1,350 shares	High 79	Low 77
Week March 11	Sales shares	High ..	Low ..
Week March 18	Sales 400 shares	High 77	Low 77
Week March 25	Sales 100 shares	High ..	Low ..

For the year—High, 79, March 1; Low, 72½, Jan. 31.
Last year—High, 84; Low, 59½.

SIX PER CENT. TRUST GOLD BONDS, \$19,000,000.

Outstanding of the 1908 issue of \$20,000,000.

Week February 25	Sales 90 bonds	High 103¾	Low 103½
Week March 4	Sales 50 bonds	High 103½	Low 103¾
Week March 11	Sales 42 bonds	High 103½	Low 103½
Week March 18	Sales 42 bonds	High 103¾	Low 103½
Week March 25	Sales 52 bonds	High 103¾	Low 103½

For the year—High, 104, Feb. 11; Low, 103, Jan. 7.
Last year—High, 104½; Low, 101¾.

NEW DISTRIBUTING POINTS FOR FIRESTONE TIRES.

In order to make Firestone tires and demountable rims immediately available to motorists everywhere, the Firestone Tire & Rubber Co. (Akron) has increased its number of wholesale distributing stations considerably of late. A new direct factory branch will be opened in Omaha, Nebraska, March 1, at No. 2127 Farnam street in charge of George M. Martin. Following are the more recently established distributing agencies: Grand Rapids Vulcanizing Co., No. 165 North Division street, Grand Rapids, Michigan; Chattanooga Rubber Tire Works, No. 808 Broad street, Chattanooga, Tennessee; The Rubber Shop, No. 6 Branford place, Newark, New Jersey.

TRADE NEWS NOTES.

The Goodyear Tire and Rubber Co. (Akron, Ohio), have recently completed some extensive additions to their manufacturing plant. This will enable them to add 1,500 employes to their working force.

George A. Alden & Co. (Boston, Massachusetts), will exhibit at the International Rubber Exhibition in London, in June, a full line of manufactured samples to show the great worth of their M R product to rubber manufacturers. Mr. George Watkinson, their representative on M R has already left for London to arrange for the exhibit.

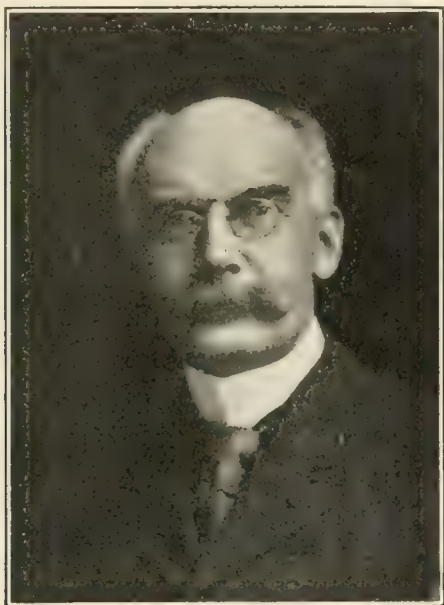
President H. T. Dunn, of the Fisk Rubber Co. (Chicopee, Massachusetts), has recently returned from a tour of inspection of the company's various branches, that took him clear across to the Pacific coast and as far south as Atlanta, Georgia, and New Orleans, Louisiana, in which latter city the company has recently established a new branch.

The employes of the Walpole Rubber Works, Walpole, Mass., held an assembly on March 17, at which about 200 couples were present. John C. McGuane had charge of the floor, and the participants were enthusiastic over the success of the affair.

The Converse Rubber Shoe Co. (Malden, Massachusetts), has settled with the thirteen companies with which it had insured the portion of its factory recently destroyed by fire, for \$195,000.

NORRIS—DE BEROLDINGEN.

SAMUEL NORRIS, secretary of the United States Rubber Co. (New York), was united in matrimony, on March 18, to the Countess Margot de Beroldingen, at the home of Mrs. Joseph F. Stone, the bride's mother, at Newport, Rhode Island. Mr. and Mrs. Norris are at present enjoying a trip in the South. Well known in rubber trade circles, as attorney and subsequently secretary of the United States Rubber Co., Mr. Norris was born in 1862 at Bristol, Rhode Island. The greater portion of his youth was passed in Europe, where his father represented E. Remington & Sons, in the sale of small arms. In 1883 he gradu-



SAMUEL NORRIS.

ated with honors in history and in the general course, from Harvard, and after attending law school at Harvard for two years, was admitted to the bar in Rhode Island in 1883 and spent some time in the study of the law in the office of Colonel Samuel P. Colt, attorney-general of that state. He then took up the practice of law in Providence, which he relinquished, in 1897, to become attorney for the United States Rubber Co. In 1901, he was elected secretary of the company and still fills the dual office. From 1897 until 1899, Mr. Norris served as a member of the Rhode Island Legislature. For the past few years he has made his home chiefly in New York, where, as a member of the University and other clubs and in business circles, he has made many friends.

The wedding ceremony was attended by a comparatively small gathering of the immediate relatives and friends of both parties, among whom were a number of the directors of the United States Rubber Co., whose gift, a valuable and exceedingly beautiful chest of Tiffany silver, was conspicuous among the wedding presents. A wedding breakfast and brief reception, at which the newly-wedded couple received the congratulations of their friends, followed the ceremony. On their return from the wedding trip, Mr. and Mrs. Norris will take up their residence in New York.

DIAMOND RUBBER COMPANY EXPANDING.

THE Diamond Rubber Co. (Akron, Ohio), have recently completed a new plant, on Jackson street, in that city, which they have equipped for the manufacture of rain coats or weather-proof garments answering that description. The company now has upwards of 40 branch establishments in the different cities, the latest additions to their number being stores for the distribution of their tires to the trade at Saginaw, Mich., and in the adjacent city of Toledo, at No. 740 Madison avenue, where C. W. Greene is in charge.

WESTERN ELECTRIC CO.

THE fiscal year of the above company having been changed to terminate on December 31, in place of November 30, as heretofore, the report to stockholders dated March 20, covers thirteen instead of twelve months. The company's sales, during this period, reached a total of \$68,375,150, as compared with \$45,575,138 for the preceding year of twelve months, an increase equivalent to 38.5 per cent. per annum. This increase was well distributed over the different lines of merchandise and among the various classes of customers. With receipts from other sources, the company's total income amounted to \$68,861,455. Deducting from this \$63,442,286, the cost of product, there was left the sum of \$5,419,169, for distribution, which was disposed of as follows: interest paid, \$884,893; carried to reserves, \$1,150,000; paid in dividends, \$1,700,000; carried to surplus, \$1,684,276.

Reference is made in the report to the policy of the company of concentrating its manufacturing operations at the plant at Hawthorne, Illinois, which is undergoing constant enlargement and improvement with this end in view. In furtherance of this plan, the company's Clinton street and Polk street properties in Chicago, were sold for \$3,247,204.09. As these properties were carried on the books at \$2,759,971.14, there was a profit of \$487,232.95 on the transaction, which has been carried to reserve. Additions to the Hawthorne plant, to cost about \$1,000,000, have been authorized for 1911.

The report also refers to the sale of \$6,250,000 first mortgage 5 per cent. bonds, held as security for \$5,000,000, two year, 4½ per cent. collateral trust notes, issued January 1, 1911. The proceeds of the sale were used to take up the notes, on January 1, 1911, and to provide for future needs of the company.

The balance sheet that accompanies the report shows assets amounting to \$58,385,945, with total liabilities, including general reserves of \$2,846,506 and all capital liabilities, of \$39,264,883, leaving a surplus of \$19,121,062, on January 1, 1911.

NEW INCORPORATIONS.

AUTOMOBILE TIRE INNERLINING Co., January 3, 1911, under the laws of Ohio; authorized capital, \$25,000. Incorporators: Mark D. Bruner, William Stacey, M. J. Roche, G. A. Macduff, and C. L. Benz. Location of principal office: Cincinnati, Ohio.

The Diamond Rubber Co., a New York corporation, qualified January 11, 1911, to do business in Wisconsin, by filing a certified copy of its articles of incorporation at Madison.

Economy Waste and Packing Co., of New Jersey, March 10, 1911, under the laws of New Jersey; authorized capital \$100,000. Incorporators: W. F. Gorsuch, E. A. Timlin, and J. St. Clair Mitchell—all of No. 164 Market street, Newark, New Jersey.

The B. F. Goodrich Rubber Co., December 1, 1910, under the laws of Colorado; capital \$10,000. Incorporators: F. F. Sargeant, L. G. Larson and T. M. Morrow—all of Denver, Colorado.

Gorham-Revere Rubber Co., December 29, 1910, under the laws of California; capital \$50,000. Directors: F. G. Sargent, W. R. Pierce, W. B. Heckmann—all of Alameda, California; J. B. Brady and W. D. Rigdon—both of San Francisco, California. Place of business: San Francisco.

Halpern & Schoenfeld, Inc., March 2, 1911, under the laws of New York; capital \$5,000. Incorporators: Isaac Halpern, No. 231 East Tenth street, New York; Philip Schoenfeld and Esther Schoenfeld—both of No. 205 South Third street, Brooklyn, New York. The object of the company is to manufacture rubber cement. The office of the company will be located in Brooklyn.

Hardman Tire and Rubber Co., of New York, March 3, 1911, under the laws of New York; authorized capital \$15,000, fully paid and non-assessable. Incorporators: E. W. Tabor (president), Philip R. Straus (vice-president), and Benjamin G. McCague (secretary and treasurer)—all of No. 1931 Broadway, New York. The company will sell the automobile tires manufactured by the Hardman Tire and Rubber Co., of Belleville, New Jersey.

E. J. McCormick Rubber Co., January 23, 1911, under the laws of New York; capital \$25,000. Incorporators: John Behrens, John Henry Behrens—both of Hasbrouck Heights, New Jersey, and Edward J. McCormick, Brooklyn, New York. Location of principal office: Manhattan.

Monad Rubber Co., March 6, 1911, under the laws of Connecticut; authorized capital \$125,000. Incorporators: Charles E. Williamson, Paul L. Miller, and F. W. Allan.

New York Rubber Reclaiming Co., January 21, 1911, under the laws of New York; capital \$300,000. Incorporators: James M. Waterbury, Jr., No. 156 Madison avenue, Grenville F. Waterbury, No. 80 South street, and John C. Waterbury, Westchester—all of New York.

Oxford Rubber Co., February 21, 1911, under the laws of Massachusetts; authorized capital \$75,000. Incorporators: John A. Comstock, Stoughton, Massachusetts, William Edward Allen and John J. Sullivan—both of Cambridge, Massachusetts.

Security Spring Tire Co., January 27, 1911, under the laws of Wisconsin; capital \$50,000. Incorporators: B. F. Fry, H. A. Fry, G. J. Bruce, W. J. Durham, and F. S. Durham. Location of the principal office: Wautoma, Wisconsin.

TRADE NEWS NOTES.

The Standard Rubber and Cable Co. (Bridgeport, Connecticut), whose incorporation was recorded in THE INDIA RUBBER WORLD of November 1, 1910, are engaged in the manufacture of a line of special moulded and cut rubber goods for mechanical purposes, also tubing, sheet rubber, unvulcanized gum, fabrics for the auto tire repair trade and rubber cement, and a complete line of rubber covered wire, both braided and plain, for automobile and electrical trade in general.

The Standard Auto Tire Co. (Lincoln, Nebraska), announces the accession to its official staff of N. J. Marvin, who will fulfill the duties of vice president and secretary of the corporation.

The General Rubber Co. (New York), paid a 20 per cent. dividend to its stockholders on March 28.

As business manager of the Derby Rubber Co. (Derby, Connecticut), P. B. Price succeeds Mr. Joseph B. Roberts, who resigned on February 28. A. H. Golden is at present the company's salesman.

G. W. Husted, for many years connected with a leading carriage manufacturer, is now identified with the Fairfield Rubber Co., Fairfield, Conn., manufacturers of carriage cloth, imitation leather, etc., and will in future represent them on the road.

Review of the Crude Rubber Market.

MARCH weather with all of its uncertainties and sudden changes, was no more erratic than the March crude rubber market. It was a month of sharp fluctuations and almost daily surprises. During the first two days of the month up river fine sold as high as \$1.68@1.70, which were the highest figures of the month. At the end of the first ten days the prices had dropped to \$1.59@1.60, and by the twentieth of the month were down as low as \$1.50@1.53. On the afternoon of March 22, the price of up river fine suddenly advanced 6d. in the London market. On the twenty-third there was some active bidding in the domestic market and sales were again reported as high as \$1.58. This sudden advance, which disturbed market conditions and made many manufacturers nervous, was very short-lived, and within twenty-four hours prices again began to slide downward. By the close of the fourth week of the month, prices were again below \$1.50, and at the end were in the neighborhood of \$1.40 or almost 30 cents below the opening prices. While there has been fairly steady buying throughout the month by actual consumers, the market uncertainties have been such that speculative purchases have been few. Large purchasers have been conservative, but small dealers report a fair demand from day to day buyers. The auction sales, Ceylons in London, March 28 and 29, brought out very unsatisfactory prices. Smoked sheets averaged \$1.60@1.61, pale crepe, \$1.51@1.52, and biscuits sold as low as \$1.48. In this market smoked sheets were quoted as low as \$1.59@1.60. The auction sale of Africans in Antwerp earlier in the month was considered fairly successful, the prices obtained being satisfactory. The success of this sale is held responsible for the sudden advance during the fourth week of the month and the quick decline which followed is attributed to the efforts of the 'London bear clique, which was determined that the market should not be strong when the Ceylon auction was held. Locally, the market has largely followed the lead of London. At the close of the month trading is restricted to necessity purchases and prices are at the lowest point since March 1.

NEW YORK QUOTATIONS.

FOLLOWING are the quotations at New York for Pará grades, one year ago, one month ago, and March 30—the current date:

PARÁ.	Apr. 1, '10.	Mar. 1, '11.	Mar. 30, '11.
Islands, fine new.....	252@253	152@153	130@131
Islands, fine, old.....	none here	none here	none here
Upriver, fine, new.....	270@271	164@165	139@140
Upriver, fine old.....	272@273	166@167	144@145

Islands, coarse, new.....	105@106	89@ 90	62@ 63
Islands, coarse, old.....	none here	none here	none here
Upriver, coarse, new.....	172@173	117@118	108@109
Upriver, coarse old.....	174@175	119@120	110@111
Cametá	130@131	93@ 94	79@ 80
Caucho (Peruvian), ball..	174@175	117@118	108@109
Caucho (Peruvian), sheet	135@136	none here	none here

PLANTATION PARA.

Fine smoked sheet.....	260@261	183@184	159@160
Fine pale crepe.....	—@—	168@170	145@146
Fine sheets and biscuits..	—@—	158@159	142@143

CENTRALS.

Esmeralda, sausage.....	152@153	107@108	105@106
Guayaquil, strip.....	120@121	none here	none here
Nicaragua, scrap.....	152@153	105@106	103@104
Panama	none here	none here	none here
Mexican, scrap.....	151@152	104@105	103@104
Mexican, slab.....	none here	65@ 66	62@ 63
Mangabeira, sheet.....	none here	72@ 73	68@ 69
Guayule	99@100	75@ 76	64@ 65
Balata, sheet.....	—@—	95@ 96	93@—
Balata, block.....	—@—	72@ 73	67@ 68

AFRICAN.

Lopori, ball, prime.....	204@205	132@133	123@124
Lopori, strip, prime.....	none here	none here	none here
Aruwimi	none here	125@126	122@123
Upper Congo, ball, red...	170@171	132@133	125@126
Ikelemba	none here	none here	none here
Sierra Leone, 1st quality..	170@171	135@136	122@123
Massai, red	171@172	135@136	122@123
Soudan niggers	none here	none here	none here
Cameroon, ball	112@114	88@ 90	79 @80
Benguela	none here	80@ 81	79@ 80
Madagascar, pinky	125@126	105@106	100@101
Accra flake	34@ 35	43@ 44	40@ 41

EAST INDIAN.

Assam	none here	105@106	104@105
Pontianak	8¼@8½	7¼@7½	7@7¼
Borneo	none here	none here	none here

Late Pará cables quote:

	Per Kilo.		Per Kilo.
Islands, fine.....	6\$000	Upriver, fine.....	7\$400
Islands, coarse.....	2\$500	Upriver, coarse.....	4\$000
		Exchange	16d.

Latest Manáos advices:

Upriver, fine.....	8\$200	Exchange	16 1/16d.
Upriver, coarse.....	5\$400		

Statistics of Para Rubber (Excluding Caucho).

NEW YORK.

	Fine and Medium	Coarse.	Total 1911.	Total 1910.	Total 1909.
Stocks, January 31.....tons	203	39	= 242	232	235
Arrivals, February.....	694	508	= 1,202	2,005	1,754
Aggregating	897	547	= 1,444	2,237	1,989
Deliveries, February.....	763	516	= 1,279	2,051	1,604

Stocks, February 28..... 134 31 = 165 186 385

	PARA.	ENGLAND.	1911.	1910.	1909.
Stocks, January 31, tons	1,765	1,170	1,075	1,225	345
Arrivals, February.....	4,695	3,660	3,930	1,071	1,215
Aggregating	6,460	4,830	5,005	2,296	1,560
Deliveries, February....	3,215	4,365	3,295	911	1,050

Stocks, February 28.. 3,245 465 1,710 1,385 510 420

World's visible supply, February 28.....tons	1911.	1910.	1909.
Para receipts, July 1 to February 28.....	21,715	23,130	22,340
Para receipts of caucho, same dates.....	4,080	3,910	4,090
Afloat from Para to United States, Feb. 28..	665	1,980	2,000
Afloat from Para to Europe, February 28..	1,340	1,170	1,420

African Rubbers.

NEW YORK STOCKS (IN TONS).

February 1, 1910.....	134	September 1, 1910.....	300
March 1.....	161	October 1.....	375
April 1.....	121	November 1.....	100
May 1.....	125	December 1.....	140
June 1.....	90	January 1, 1911.....	115
July 1.....	120	February 1.....	115
August 1.....	250	March 1.....	111

New York.

IN regard to the financial situation, Albert B. Beers (broker in crude rubber and commercial paper, No. 68 William street, New York), advises as follows: "During March there has been a good demand for commercial paper at 4½@5 per cent. for the best rubber names, and 5¼@5½ per cent. for those not so well known."

NEW YORK PRICES FOR FEBRUARY (NEW RUBBER).

	1911.	1910.	1909.
Upriver, fine	\$1.28@1.68	\$1.87@2.10	\$1.20@1.26
Upriver, coarse .....	.98@1.20	1.15@1.28	.91@.96
Islands, fine	1.15@1.56	1.81@2.04	1.15@1.20
Islands, coarse .....	.65@.90	.75@.89	.57@.61
Cametá .....	.68@.95	.85@.98	.62@.65

Amsterdam.

F. JOOSTEN reports [March 17]:

The result of the tendersale on March 16 was very satisfactory considering that with the east tendency for rubber generally almost all plantation grades found buyers at prices fairly above foreign parity, though ranging from 5 to 10 per cent. below catalogue valuations of a fortnight ago. Out of about 13,500 kilos offered some 6,000 kilos were sold, while among the unsold lots there was one of about 6,000 kilos of Borneo.

Rubber Receipts at Manaos.

DURING January and seven months of the crop season, for three years (courtesy of Messrs. Scholz & Co.):

	JANUARY.	JULY-JANUARY.
FROM—	1911.	1910.
Rio Purús-Acre	1,639	2,172
Rio Madeira	320	315
Rio Jurua	915	886
Rio Javary-Iquitos.....	209	402
Rio Solimões.....	130	179
Rio Negro.....	38	174
Total	3,251	4,128
Caucho	847	1,358
Total	4,098	5,486
For Shipment From.	1909.	1910-11.
Manaos	2,489	3,772
Pará	1,609	1,714
Total	4,098	5,486

Para.

R. O. AHLERS & Co. report [March 11]:

The market was maintained by purchases for the valorization scheme, while all other buyers were out of the market for the whole last week. Most of the entries were sold willingly at the prices of 9\$000 and 8\$800 for Upriver fine and 6\$000 for Upriver coarse, but today's prices would be 8\$500.

IMPORTS FROM PARA AT NEW YORK.

The Figures Indicate Weight in Pounds.

FEBRUARY 25.—By the steamer *Clement*, from Manáos and Pará:

	Fine.	Medium.	Coarse.	Caucho.	Total.
Poel & Arnold.....	248,400	50,800	70,200	20,700	=390,100
A. T. Morse & Co.....	125,900	12,400	90,000	26,300	=254,600
New York Commercial Co.	51,400	21,400	46,200	31,400	=150,400
Henderson & Korn.....	47,800	.....	54,400	.....	=102,200
General Rubber Co.....	26,200	10,000	7,000	700	=43,900
Hagemeyer & Brunn.....	.....	.....	54,000	.....	=54,000
Total	499,700	94,600	321,800	79,100	=995,200

MARCH 6.—By the steamer *Stephen*, from Manáos and Pará:

	Fine.	Medium.	Coarse.	Caucho.	Total.
Poel & Arnold.....	93,100	33,800	126,000	57,300	=310,200
A. T. Morse & Co.....	86,600	19,400	72,500	15,100	=193,600
General Rubber Co.....	110,400	23,800	34,000	6,200	=174,400
New York Commercial Co.	41,800	31,000	30,700	26,700	=130,200
Henderson & Korn.....	10,700	.....	23,100	700	=34,500
Laurence Johnson & Co.....	.....	.....	20,300	2,200	=22,500
Total	342,600	108,000	306,600	108,200	=865,400

MARCH 10.—By the steamer *Rio Janeiro*, from Pará:

	Fine.	Medium.	Coarse.	Caucho.	Total.
Poel & Arnold.....	67,100	17,400	78,800	1,700	=165,000
New York Commercial Co.	21,800	1,400	21,800	700	=45,700
Henderson & Korn.....	1,700	.....	34,300	.....	=36,000
A. T. Morse & Co.....	6,800	.....	11,200	.....	=18,000
Total	97,400	18,800	146,100	2,400	=264,700

MARCH 20.—By the steamer *Dunstan*, from Manáos and Pará:

	Fine.	Medium.	Coarse.	Caucho.	Total.
Poel & Arnold.....	235,000	96,200	130,800	36,200	=498,200
New York Commercial Co.	109,300	.....	.....	.....	=109,300
A. T. Morse & Co.....	8,600	3,200	44,900	31,700	=88,400
Henderson & Korn.....	6,400	.....	71,900	600	=78,900
Hagemeyer & Brunn.....	5,700	700	28,400	.....	=34,800
De Lagotellerie & Co.....	.....	.....	7,300	.....	=7,300
Total	365,000	100,100	283,300	68,500	=816,900

OTHER NEW YORK ARRIVALS.

CENTRALS.

[*This sign, in connection with imports of Centrals, denotes Guayule rubber.]

POUNDS.

PARA RUBBER VIA EUROPE.	POUNDS.
FEB. 20.—By the <i>Laurentic</i> =Liverpool:	
A. T. Morse & Co. (Coarse)...	35,000
N. Y. Commercial Co. (Fine)...	22,000
Raw Products Co. (Coarse)...	11,500
FEB. 25.—By the <i>Lusitania</i> =Liverpool:	
Robinson & Co. (Coarse).....	33,500
Raw Products Co. (Coarse)....	4,500
FEB. 27.—By the <i>Amerika</i> =Hamburg:	
A. T. Morse & Co. (Caucho)...	11,000
N. Y. Commercial Co. (Coarse)...	30,000
MARCH 1.—By the <i>Minnetonka</i> =London:	
General Rubber Co. (Coarse).....	25,000
MARCH 2.—By the <i>Vaderland</i> =Antwerp:	
Muller, Schall & Co. (Fine).....	13,500
MARCH 3.—By the <i>Cymric</i> =Liverpool:	
Raw Products Co. (Coarse)....	11,500
Raw Products Co. (Caucho)....	11,000
MARCH 3.—By the <i>St. Paul</i> =London:	
Poel & Arnold (Coarse).....	22,500

MARCH 6.—By the <i>Franconia</i> =Liverpool:	
Robinson & Co. (Coarse).....	70,000
Poel & Arnold (Fine).....	11,500
William H. Stiles (Fine).....	5,000
C. P. dos Santos (Coarse).....	16,000
MARCH 8.—By the <i>President Grant</i> =Hamburg:	
A. T. Morse & Co. (Coarse)....	20,000
Wallace L. Gough Co. (Fine)....	11,500
Robert Badenhop (Fine).....	6,000
James T. Johnstone (Coarse)...	3,500
MARCH 13.—By the <i>Kaiserin Aug. Victoria</i> =Hamburg:	
Poel & Arnold (Fine).....	18,000
N. Y. Commercial Co. (Coarse)...	10,000
MARCH 14.—By the <i>Cestrian</i> =Liverpool:	
N. Y. Commercial Co. (Fine).....	55,000
MARCH 20.—By the <i>Laurentic</i> =Liverpool:	
N. Y. Commercial Co. (Fine)...	155,000
Robinson & Co. (Fine).....	22,500
C. P. dos Santos (Fine).....	6,500
Poel & Arnold (Caucho).....	33,500
N. Y. Commercial Co. (Caucho)...	7,000

FEB. 20.—By the <i>Laurentic</i> =Liverpool:	
Nelson Veno	11,500
FEB. 20.—By the <i>Vigilancia</i> =Tampico:	
New York Commercial Co.....*	135,000
Ed. Maurer	*75,000
FEB. 21.—By the <i>Allemania</i> =Colombia:	
Maitland, Coppell & Co.....	11,500
Kunhardt & Co.....	4,500
G. Amsinck & Co.....	2,000
Pablo Calvet & Co.....	1,000
R. Del Gallego & Co.....	1,000
FEB. 21.—By the <i>Creole</i> =New Orleans:	
A. T. Morse & Co.....	4,500
Manhattan Rubber Manufactur-	2,500
ing Co.	7,000
FEB. 23.—By the <i>Alhanca</i> =Colon:	
G. Amsinck & Co.....	20,000
P. V. Rubio & Co.....	7,500

New York Commercial Co.	1,000	
W. Loiza & Co. of New York	1,000	
Dumarest Bros. & Co.	1,000	34,500
J. H. Rossbach & Bros.	18,000	
Continental-Mexican Rubber Co.	*90,000	
Harburger & Stack.	5,500	
H. Marquardt & Co.	4,000	
General Export and Commission Co.	3,500	
Silva Bussenius & Co.	2,500	
Mecke & Co.	1,500	
International Products Co.	1,000	20,500
C. P. dos Santos.	15,000	
Continental-Mexican Rubber Co.	*56,000	
A. T. Morse & Co.	*20,000	
Maitland, Coppel & Co.	9,000	
A. Held	4,000	
R. Del Castillo & Co.	2,500	
Delima Cortissoz & Co.	2,000	
Pablo Calvet & Co.	1,500	
Caballero & Blanco.	1,000	20,000
J. Samblada & Co.	3,000	
G. Amsinck & Co.	2,500	
Pablo Calvet & Co.	2,000	
Piza, Nephews & Co.	2,000	
Maldonado & Co.	1,000	
Isaac Brandon & Bros.	1,000	
A. M. Capen's Sons.	1,000	13,000
Continental-Mexican Rubber Co.	*100,000	
A. T. Morse & Co.	5,000	
Robinson & Co.	3,000	
Eggers & Heinlein.	1,500	9,500
A. M. Capen's Sons.	5,500	
G. Amsinck & Co.	2,500	
Delima Cortissoz & Co.	1,000	9,000
Ed. Maurer	*190,000	
New York Commercial Co.	*70,000	
Poel & Arnold	*30,000	
For Europe	*35,000	*325,000
Poel & Arnold	4,500	
Rubber Trading Co.	5,500	10,000
Continental-Mexican Rubber Co.	*75,000	
Harburger & Stack.	7,000	
E. N. Tibbals & Co.	3,500	
Roldau & Van Sickle.	2,500	
General Export and Commission Co.	1,500	
International Products Co.	1,000	15,500
Poel & Arnold	15,000	
Ed. Maurer	*110,000	
New York Commercial Co.	*34,000	
For Europe	*33,000	*177,000
Kunhardt & Co.	6,000	
Maitland, Coppel & Co.	5,500	
R. Del Castillo & Co.	5,500	
G. Amsinck & Co.	1,500	
A. Held	1,000	19,500
Continental-Mexican Rubber Co.	*150,000	
Charles T. Wilson.	*26,000	*176,000
G. Amsinck & Co.	19,000	
New York Commercial Co.	4,000	
J. Julia & Co.	3,000	
Roldau & Van Sickle.	2,500	
Wessels Kulenkampff & Co.	2,000	
Dumarest Bros. & Co.	2,000	
H. Mann & Co.	1,500	
Pablo Calvet & Co.	1,000	
Isaac Brandon & Bros.	1,000	36,000

Manhattan Rubber Manufacturing Co.	7,000	
Robinson & Co.	4,500	
A. T. Morse & Co.	2,000	
H. Marquardt & Co.	1,500	
Eggers & Heinlein.	1,500	
New York Commercial Co.	1,000	10,500
Continental-Mexican Rubber Co.	*225,000	
Charles T. Wilson.	*25,000	*250,000
George A. Alden & Co.	2,000	
G. Amsinck & Co.	1,000	
International Products Co.	1,000	4,000
A. T. Morse & Co.	*20,000	
Robert Badenhop	8,000	28,000
Continental-Mexican Rubber Co.	*200,000	
Piza, Nephews & Co.	15,000	
Continental-Mexican Rubber Co.	*75,000	
Charles T. Wilson.	*7,000	*82,000
A. Held	22,000	
Kunhardt & Co.	16,000	
Maitland, Coppel & Co.	6,000	
Isaac Brandon & Bros.	4,500	
General Rubber Co.	2,500	
R. Del Castillo & Co.	1,500	
G. Amsinck & Co.	1,500	
Delima Cortissoz & Co.	1,000	
J. Julia & Co.	1,000	
Lionel Hagenaers & Co.	1,000	57,000
G. Amsinck & Co.	3,000	
A. N. Rotholz.	1,000	
Robinson & Co.	1,000	
Eggers & Heinlein.	1,500	6,500
Harburger & Stack.	9,000	
E. N. Tibbals & Co.	5,500	
International Products Co.	4,500	
General Export Co.	4,000	
H. Marquardt & Co.	3,000	
George A. Alden & Co.	2,000	
A. Klipstein & Co.	1,500	
Mecke & Co.	1,000	
American Trading Co.	1,000	31,500
Raw Products Co.	*13,500	
Charles T. Wilson.	*15,000	
G. Amsinck & Co.	9,000	
American Trading Co.	4,000	
J. Julia & Co.	3,000	
Charles E. Griffin.	1,500	
Mecke & Co.	1,500	
A. T. Morse & Co.	1,000	20,000
Ed. Maurer	*115,000	
Ed. Maurer	*22,500	
Poel & Arnold.	4,500	
A. T. Morse & Co.	3,500	
G. Amsinck & Co.	2,500	
Eggers & Heinlein.	2,000	
George A. Alden & Co.	1,000	9,000
Schutte Bismann & Co.	2,000	
Suzarte & Whitney.	2,000	
G. Amsinck & Co.	1,500	
R. Del Castillo & Co.	1,500	
Delima Cortissoz & Co.	1,500	
A. Held	1,000	
De Sola Bros. & Pardo.	1,000	10,500
New York Commercial Co.	*100,000	
For Europe	*135,000	*345,000

G. Amsinck & Co.	7,000	
A. Santos & Co.	3,000	
R. G. Barthold.	1,000	
Calles & Bros. & Co.	1,000	
Suzarte & Whitney.	1,000	13,000
New York Commercial Co.	11,000	
Poel & Arnold.	*33,000	
Harburger & Stack.	6,500	
H. Marquardt & Co.	4,000	
E. N. Tibbals & Co.	2,500	
J. A. Kendall Co.	2,500	
E. Steiger & Co.	1,000	
For Havre	5,000	21,500
AFRICAN.		
POUNDS.		
George A. Alden & Co.	15,000	
Poel & Arnold.	13,500	
James T. Johnstone.	5,500	
Robinson & Co.	4,500	
Rubber Trading Co.	4,500	
A. T. Morse & Co.	3,500	46,500
A. T. Morse & Co.	145,000	
George A. Alden & Co.	110,000	
Raw Products Co.	4,500	259,500
A. T. Morse & Co.	7,000	
Poel & Arnold.	9,000	
A. T. Morse & Co.	11,500	
George A. Alden & Co.	7,000	18,500
James T. Johnstone.	40,000	
George A. Alden & Co.	25,000	
Poel & Arnold.	15,000	
Rubber Trading Co.	5,500	
Wallace L. Gough Co.	11,500	
Robert Badenhop	3,900	100,900
Poel & Arnold.	68,000	
General Rubber Co.	125,000	
George A. Alden & Co.	50,000	
Rubber Trading Co.	13,500	
Robinson & Co.	11,500	
A. T. Morse & Co.	5,500	
Wallace L. Gough Co.	4,500	278,000
Poel & Arnold.	9,000	
Muller, Schall & Co.	9,000	18,000
George A. Alden & Co.	45,000	
Poel & Arnold.	22,500	
James T. Johnstone.	10,000	77,500
George A. Alden & Co.	50,000	
A. T. Morse & Co.	40,000	
Poel & Arnold.	9,000	
Muller, Schall & Co.	10,000	109,000
George A. Alden & Co.	52,000	
James T. Johnstone.	44,500	
Robert Badenhop	6,000	102,500
Poel & Arnold.	52,000	
Muller, Schall & Co.	10,000	62,000
General Rubber Co.	77,000	
Raw Products Co.	15,000	
James T. Johnstone.	5,500	
Robinson & Co.	4,500	102,000
George A. Alden & Co.	70,000	
General Rubber Co.	56,000	
Poel & Arnold.	30,000	
George A. Alden & Co.	19,000	
A. T. Morse & Co.	18,000	
James T. Johnstone.	7,000	74,000
Poel & Arnold.	44,500	
George A. Alden & Co.	40,000	
A. T. Morse & Co.	11,500	96,000

GUTTA-JELUTONG.		POUNDS.
FEB. 23.—By the <i>Sikh</i> —Singapore:		
Wallace L. Gough Co.....	115,000	
L. Littlejohn & Co.....	100,000	215,000
MARCH 10.—By the <i>Inverclyde</i> —Singapore:		
L. Littlejohn & Co.....	650,000	
Haebler & Co.....	450,000	
Wallace L. Gough Co.....	250,000	
George A. Alden & Co.....	55,000	1,405,000
BALATA.		POUNDS.
FEB. 20.—By the <i>Marcona</i> —San Blas:		
Barthug & De Leon.....		8,000
MARCH 1.—By the <i>Maroquinne</i> —Demerara:		
Middleton & Co.....		7,000
MARCH 7.—By the <i>Coppename</i> —Trinidad:		
G. Amsinck & Co.....		11,000
MARCH 15.—By the <i>Naramaca</i> —Trinidad:		
Ed. Maurer	2,500	
American Trading Co.....	2,500	
Middleton & Co.....	2,500	7,500
MARCH 23.—By the <i>Nararuz</i> —Trinidad:		
G. Amsinck & Co.....		20,000
GUTTA-PERCHA.		POUNDS.
FEB. 23.—By the <i>Sikh</i> —Singapore:		
L. Littlejohn & Co.....	33,500	
Ed. Maurer	11,500	45,000
MARCH 8.—By the <i>President Grant</i> —Hamburg:		
Robert Soltau & Co.....		9,000
MARCH 10.—By the <i>Inverclyde</i> —Singapore:		
L. Littlejohn & Co.....	45,000	
Ed. Maurer	45,000	
Haebler & Co.....	40,000	130,000

PORT OF NEW YORK—FEBRUARY.

<i>Imports:</i>	Pounds.	Value.
India-rubber	6,014,187	\$5,514,223
Balata	19,941	12,609
Gutta-percha	162,029	40,023
Gutta-jelutong (Pontianak) ..	1,472,319	83,838
Guayule	1,085,659	521,310
Total	8,754,135	\$6,172,003
<i>Exports:</i>		
India-rubber	291,967	\$245,135
Balata	12,500	10,625
Gutta-percha	76,195	37,854
Guayule	68,869	7,585
Reclaimed rubber.....	842,825	\$75,197
Rubber scrap, imported.....	547,485	64,562

		POUNDS.

		POUNDS.
FEB. 7. By the <i>Cestrian</i> =Liverpool:		
Poel & Arnold (Africans)....	4,500	
George A. Alden & Co. (Africans)	2,200	6,700
FEB. 8.—By the <i>Sagamore</i> =Liverpool:		
James T. Johnstone (Africans)		5,500
FEB. 10.—By the <i>Bisley</i> =Singapore:		
Wallace L. Gough Co. (Jelutong).....		487,000
FEB. 14.—By the <i>Sikh</i> =Singapore:		
State Rubber Co. (East Indian) 9,000		
State Rubber Co. (Jelutong) ..	936,000	945,000
FEB. 18.—By the <i>Badenia</i> =Hamburg:		
Muller, Schall & Co. (Africans)		3,300

NEW YORK.

EXPORTERS.	Fine.	Medium.	Coarse.	Caucho.	TOTAL.	Fine.	Medium.	Coarse.	Caucho.	TOTAL.	TOTAL.
Gruner & Co.	45,143	7,352	132,152	10,742	195,389	40,970	6,460	13,320	57,079	117,829	313,218
E. Pinto Alves & Co.	111,583	2,187	143,005	18,653	275,428	117,139	13,456	8,446	....	139,041	414,469
Adelbert H. Alden, Limited.	42,670	9,350	30,222	6,458	88,700	510	170	3,960	....	4,640	93,340
Suarez Hermanos & Co. ....	....	....	....	....	....	55,403	....	4,739	30,027	90,169	90,169
Scholz, Hartje & Co.	12,580	2,210	8,260	....	23,050	17,850	2,040	6,270	27,360	53,520	76,570
J. Marques	10,030	1,020	12,210	....	23,260	2,890	340	5,280	....	8,510	31,770
R. O. Ahlers & Co. ....	....	....	....	....	....	6,538	....	4,724	9,638	20,900	20,900
A. de La Rivière & Co.	4,590	510	....	....	5,100	6,630	510	8,290	....	15,430	20,530
De Lagotellerie & Co. ....	....	....	....	....	....	850	340	330	14,850	16,370	16,370
Gordon & Co.	11,050	850	....	....	11,900	2,715	261	860	....	3,836	15,736
Mello & Co. ....	....	....	....	....	....	10,200	3,570	1,420	394	15,584	15,584
Pires Teixeira & Co.	6,460	....	2,640	....	9,100	....	....	....	....	....	9,100
Itacoatiara, direct ....	....	....	....	....	....	4,160	450	3,240	....	7,850	7,850
Manaos, direct	416,486	126,072	207,022	196,171	945,751	618,629	89,668	62,959	148,090	919,346	1,865,097
Iquitos, direct	67,902	7,971	28,031	13,202	117,106	....	....	....	....	....	117,106
Total, January, 1911.	728,494	157,522	563,542	245,226	1,694,784	884,484	117,265	123,838	287,438	1,413,025	3,107,809



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Plantation Rubber from the Far East.

EXPORTS OF CEYLON GROWN RUBBER.

[From January 1 to February 13, 1910 and 1911. Compiled by the Ceylon Chamber of Commerce.]

	1910.	1911.
To Great Britain..... pounds	148,911	321,565
To United States.....	158,324	251,455
To Belgium.....	1,322	27,441
To Japan.....	.....	7,135
To Germany.....	1,804	3,648
To Canada.....	1,911	.....
To Italy.....	452	.....

Total 312,724 611,244

[Same period 1909—129,859 pounds; same 1908—93,207.]

TOTAL EXPORTS FROM MALAYA.

[From January 1 to dates named. Reported by Barlow & Co., Singapore. These figures include the production of the Federated Malay States, but not of Ceylon.]

FROM—	1909.	1910.	1911.
Singapore (to Feb. 3).... pounds	141,132	252,551	664,995
Penang (to Jan. 21).....	277,888	291,166	210,737
Port Swettenham (to Jan. 19)....	.....	521,756	832,488
Total	419,020	1,065,473	1,708,220

Antwerp.

RUBBER STATISTICS FOR FEBRUARY.

DETAILS.	1911.	1910.	1909.	1908.	1907.
Stocks, January 31. kilos	645,419	482,162	597,777	1,260,009	618,650
Arrivals in February..	236,316	514,624	300,011	277,443	598,332
Congo sorts.....	172,078	454,116	184,360	255,000	549,863
Other sorts.....	64,238	60,508	115,651	22,443	48,469
Aggregating	881,735	996,786	897,788	1,537,452	1,216,982
Sales in February.....	342,528	480,252	566,355	630,348	613,121
Stocks, February 28... ..	539,207	516,534	331,433	907,104	603,861
Arrivals since Jan. 1..	786,272	776,491	583,966	825,411	916,024
Congo sorts.....	575,499	656,663	370,549	759,451	792,669
Other sorts.....	210,773	119,828	213,417	65,960	123,355
Sales since Jan. 1.....	835,277	801,469	848,268	925,201	970,347

RUBBER ARRIVALS FROM THE CONGO.

FEBRUARY 15.—By the steamer *Leopoldville*:

Bunge & Co.....	(Société Générale Africaine) kilos	52,600
Do.....	(Comptoir Commercial Congolais)	22,600
Do.....	(Société Abir)	1,100
Do.....	(Chemins de fer Grands Lacs)	1,000
Do.....	(Equatoriale Congolaise)	675
Do.....	(Société Comm. and Financ. Africaine)	1,200
Société Coloniale Anversoise.....	(Belge de Haut Congo)	6,600
Do.....	(Cie. du Lomami)	7,300
Do.....	(Cie. du Kasai)	71,000
L. & W. Van de Velde.....	(Société Comm. and Financ. Africaine)	7,000
Do.....		6,500
Charles Dethier.....	(American Congo Co.)	3,100
Cassart & Henrion.....		600
		181,275

MARCH 8.—By the steamer *Bruxellesville*:

Bunge & Co.....	(Société Générale Africaine) kilos	105,800
Do.....	(Chemins de fer Grands Lacs)	5,800
Do.....	(Comptoir Commercial Congolais)	21,000
Do.....	(Comité Spécial Katanga)	3,800
Do.....	(Société Comm. and Financ. Africaine)	60
Do.....	(Alberta)	550
L. & W. Van de Velde.....	(Cie. du Kasai)	67,000
Do.....	(Société Comm. and Financ. Africaine)	1,000
Do.....		2,000
Société Coloniale Anversoise.....	(Sud. Cameroon)	8,200
Cassart & Henrion.....		50
		215,260

Rubber Scrap Prices.

LATE NEW YORK quotations—prices paid by consumers for carload lots, per pound—are practically unchanged, as follows:

	March 1.	April 1.
Old rubber boots and shoes domestic..	9 1/4 @ 9 3/8	9 1/2 @ 9 5/8
Old rubber boots and shoes—foreign..	8 5/8 @ 8 3/4	8 3/4 @ 9
Pneumatic bicycle tires.....	4 1/2 @ 4 3/4	4 1/2 @ 4 3/4
Automobile tires.....	8 1/4 @ 8 3/8	8 3/8 @ 8 1/2
Solid rubber wagon and carriage tires..	8 1/2 @ 9	8 1/2 @ 9
White trimmed rubber.....	11 @ 11 1/2	11 @ 11 1/2
Heavy black rubber.....	4 3/4 @ 5 1/4	4 3/4 @ 5 1/4
Air brake hose.....	4 3/4 @ 5	4 3/4 @ 5
Garden hose.....	2 @ 2 1/4	2 @ 2 1/4
Fire and large hose.....	2 1/2 @ 2 3/4	2 1/2 @ 2 3/4
Matting.....	1 @ 1 1/8	1 @ 1 1/8

Liverpool.

WILLIAM WRIGHT & Co. report [March 1]:

Fine Pará.—The market has been active, and prices have advanced fully 1s. 6d. [= 36 cents] per pound. This partly owing to the firm attitude of the Brazilian receivers, but in addition there has been considerably more demand from the trade, which is a healthy sign. Exports from here this month are about 800 tons, of which America has taken 180. It must be borne in mind that after next month the receipts will be small, so that if the Pará receivers still maintain a firm attitude, a further advance in prices is extremely likely. Closing value: Upriver 7s. 1d. [= \$1.72].

WRITERS' SPECIFICATIONS
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 CONSULTING CHEMIST
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INDIA RUBBER WORLD

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Edited by HENRY C. PEARSON—Offices, No. 15 West 38th Street, NEW YORK.

Vol. XLIV. No. 2.

MAY 1, 1911.

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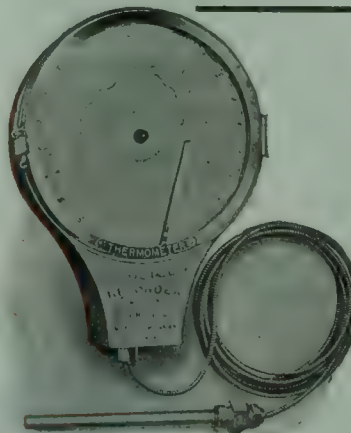
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THE INDIA RUBBER PUBLISHING CO.

No. 15 West 38th Street, New York.

CABLE ADDRESS: IRWORLD, NEW YORK.

HENRY C. PEARSON, Editor

Vol. 44.

MAY 1, 1911.

No. 2.

SUBSCRIPTIONS: \$3.00 per year, \$1.75 for six months, postpaid, for the United States and dependencies and Mexico. To the Dominion of Canada and all other countries, \$3.50 (or equivalent funds) per year, postpaid.

ADVERTISING: Rates will be made known on application.

REMITTANCES: Should always be made by bank or draft, Postoffice or Express money orders on New York, payable to THE INDIA RUBBER PUBLISHING COMPANY. Remittances for foreign subscriptions should be sent by International Postal Order, payable as above.

DISCONTINUANCES: Yearly orders for subscriptions and advertising are regarded as permanent, and after the first twelve months they will be discontinued only at the request of the subscriber or advertiser. Bills are rendered promptly at the beginning of each period, and thereby our patrons have due notice of continuance.

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Entered at New York postoffice as mail matter of the second class.

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SOME FORGOTTEN TONS OF FINE PARA.

THAT Brazil, notably Pará and Amazonas, is profoundly stirred over the great areas of cultivated *Hevea* that the tropical world possesses, is a mild way of stating a very patent fact. Yet it is probable that neither of the great rubber states mentioned, realize how strong is the position of the outside crude rubber interest. Nor do they perceive that Upriver fine is not the necessity that it was but a few short years ago. So great has been the progress in the art of preparing and learning to use rubber once deemed inferior, that most of the rubber manufacturers could, if they would, produce high-grade goods without using a pound of Brazilian-grown rubber. In other words, with other grades in the market, while they might prefer Pará, they can get along without it. Plantation rubber, shrub rubber, such as guayule, extracted rubber, pseudo rubbers, are real Pará substitutes in hundreds of rubber mills, and manufactured rubber goods grade as high as ever they did. There is, however, another source of supply that crude rubber men are likely to overlook, yet one that will wonderfully help in case of a short crop or too high a range of prices on the Amazon. The world, not the tropical world, but the temperate zone, possesses several million pounds of Pará rubber that will be shortly offered to the trade at from 50 to 70 cents a pound. There will be a steady offering of it for years to come and the supply will increase. Its source is the worn-out motor tire that goes to the reclaimer and is thoroughly "recovered." For five years past the tire manufacturers have been turning out tons of tires and paying a high price for raw material. This great accumulation of rubber is just beginning to come back, and is of a grade that can be used in almost any line of work. Those who valorize must reckon with this great invisible supply as well as with the visible.

RUBBER MANUFACTURERS AS PLANTERS.

THE news that one of the great rubber companies is to plant *Hevea* on a very large scale is of special interest not alone to its stockholders, but to the trade at large. The wisdom of such a move is unquestioned. The experimental stages of *Hevea* planting have passed. It

can be told almost to a certainty just what product can be secured in a very few years if reasonable care in location and in management are exercised. The chief value to the company will not be the profits of such a plantation, however great they may be. It will be the assurance of a constant supply of rubber at a low, unvarying cost. The vulnerability of any large rubber company may easily be measured by the amount of rubber it uses. The greater the output of manufactured goods, the greater sufferers they may be from corners, and crop shortages. Once such a plantation is producing on a scale commensurate with the needs of the company, there will result a greater steadiness in the market, and an increased difficulty in manipulating it. The earlier their rubber trees begin to yield the better it will be for the rubber trade of the world.

It has been very generally felt by rubber manufacturers that it was not within their province to plant rubber. Indeed, it is only within the last half dozen years that they were willing to concede that rubber could be cultivated upon a large scale, and successfully compete with the wild product. That a change of sentiment is at hand is already evident. Russian, German, English and American rubber manufacturers already are very considerable owners in *Hevea* plantations, and the number is constantly increasing.

That the ultra conservative should deprecate such a departure from the traditions of the trade is perhaps natural, and yet they read of great steel companies and little ones, too, buying iron prospects and locating and mining their own ore. Or, what is a better parallel, they know that the great chocolate factories of Europe and America get their cacao supplies from their own tropical plantations. The fact that a company is making steel billets does not seem to militate against its success as an ore producer. The officials of the chocolate company are able to select land, plant it and get just as good crops of cacao as if they were planters, and planters only. Why then should not the rubber manufacturer secure land and install a plantation "unit" as well administered as any other in his organization?

MORE "REAL RUBBER" IN TIRES.

THE Automobile Club of America, the richest, largest and the most enterprising of all automobile clubs, runs an up-to-date supply department for its members. Here one may buy any automobile accessory and notably—tires. Not all tires, but such makes as the club believes it safe to market. This is

usual with many clubs. What is somewhat unusual is the selling of a new tire, made especially and exclusively for the club and available to its members only. According to common report, this tire is not to be made by any of the great successful tire manufacturers. If gossips tell the truth, it will be produced by a small company, not very well known, and one that is yet to prove that it can, no matter what its backing, create a tire that is better than today's best. No doubt the Executive Committee of the Automobile Club believe exactly what they are stating to club members—that "these tires will be superior in every respect to the best tires turned out today by any manufacturer; of extraordinary durability and resiliency, and of exceedingly high grade and degree of excellence, with more real rubber in their composition than any tires now on the market." Granting their absolute honesty, their unquestioned interest in everything that is best for the club, that one sentence proclaims to any rubber manufacturer a lack of knowledge of the subject they treat. They promise, for example, "more rubber" in their tire than is to be found in any other tire of equal size. That is, they take it for granted that more rubber in a tire compound will make the tire better. That undoubtedly is true of low-grade tires, but is absolutely not true of the best grades. We don't expect to be believed by any except those who understand rubber compounding when we say that the addition of 10 per cent. or 15 per cent. of rubber to the best tire compound in existence today would probably shorten the life of that tire 25 per cent. or more. In all friendliness and with the greatest respect for the Executive Committee of the Automobile Club, we counsel caution.

THE "MONSTROUS MYSTERY."

IT IS perhaps a bit late, as it happened some months ago, but the expressions have not been withdrawn, and as they soak in they seem more offensive. They are credited to the very able and usually well balanced president of the National Fire Protection Association, who is quoted as follows: "In fire hose, the arteries and veins of our fire departments, we find manufacturers making a monstrous mystery of their wares."

To begin with, a man possessed of the oratorical temperament should not be held too strictly to account for his utterances before an applauding crowd. Oratorical intoxication is a possibility, and should be forgiven. "Monstrous mystery" is a beautiful alliterative

phrase, a bit of word painting, that needs no fact to make it interesting. Poets and orators, if they live up to their opportunities, all deal in that sort of lurid phraseology. Like Bryan's "Cross of Gold," it hits the popular fancy, and it does no harm. It is not worth while denying either the mystery or its bombastic adjective, for fire hose departments of practically every rubber factory in the world are open to the orator or to anyone else who has excuse for visiting them.

Monstrous Mystery? Mellifluous mush!

WHY CRY CALAMITY?

BASED on recent political changes at Washington, on the altogether improbable contingency of possible complications with some foreign power, on the trusts "bogey," on the backward spring season, which, by the way, promises to result in exceptionally good crops, the alleged prospect of labor troubles or some other, equally remote, and in most instances wholly visionary cause, we note a tendency in some quarters to predict impending commercial and industrial calamity, financial cataclysms, and all sorts of terrors, of the kind that disjoint the times generally.

That these hysterical utterances are wholly gratuitous and their ostensible causes without the least foundation or reason, will be evident after a calm review of conditions prevailing throughout the country, which prove, not only that pessimism is unwarranted, but that there are ample grounds for anticipating widespread prosperity. The basic wealth of the country comes from the productions of the soil. The farmer creates wealth; the railroad, manufacturer and merchant only develop and handle it. Unless the producer prospers the other lines must also suffer. Prosperity for the producer means well-being all along the line, means that railroads will haul heavy trains, workmen in factories will be fully employed, merchants will have customers, and all collateral branches of business will receive patronage in proportion. The first thing to estimate, therefore, is the promise to the producer.

From every present report the prospect was never brighter. The acreage for almost every crop has been largely increased for the coming season, and every report of present crop condition is highly satisfactory. The president of the largest bank in America, returning a few weeks ago from an 11,000-mile trip throughout the farming country of the south and west, expressed the opinion that the return to the American

farmer in 1911 would be approximately eight billion dollars. And such a return will represent far greater profits than ever before. Scientific farming in the west, as taught by the Department of Agriculture, has increased the yield of wheat from 13 bushels to 20 bushels to the acre, has added 30 per cent. to the yield of corn, has introduced diversification of crops, has created orchards and small-fruit gardens, and with these increases has reduced the cost of production. Demonstration farms in the south have shown that land which grew 400 pounds of cotton to the acre can be made to produce 1,500 pounds. Other crops have been increased in like proportion, and the producer's return, in dollars, is far greater than ever before in the history of the country.

If all this development means anything to the country, it means that the buying power of the public will be vastly increased, that the market for manufactured articles, whether they be of iron, textile, or rubber, will be tremendously developed. It means that more tires, more mechanical rubber goods, more footwear will be bought as surplus pocket money becomes more plentiful. Factories will be busier, merchants will prosper, and the people will buy. It means that the calamity howler will be relegated to a seat way back in the rear.

THE HIGH PRICE OF RUBBER during the year 1910 has had a stimulative effect that should not be overlooked, on the activity of those inventors who devote their attention to the production of synthetic rubber, rubber substitutes, and the perfection of the various processes for the reclamation or other means of using old rubber. Even the soya bean, a staple article of food supply in the far east, and the residue of which, after extraction of the oil, in the form of beancake, is, with the bean itself, imported into Europe, for use as cattle feed, has been laid under contribution by the indefatigable searchers for a raw material for artificial rubber, a German patent having been issued for the manufacture of artificial rubber from soya bean oil.

Reference has been made on various occasions in the columns of THE INDIA RUBBER WORLD, to the extraordinary durability displayed by rubber tires, as compared with steel tires doing the same work under similar conditions, the result being invariably favorable to the rubber tire. A case recently brought to our attention merits particular notice. A Diamond tire was removed from an automobile in Spokane, Wash., after having been in use since 1908, with a mileage of 30,000 miles to its credit.

NEW USES FOR RUBBER.

NOTWITHSTANDING the high price of crude rubber, until recently prevalent of which we have heard so many complaints, new uses are constantly being devised for this substance, which must result in increasing, to some extent, its consumption. Some of the more recent of these new uses, which have come to our attention, are sufficiently unique to be interesting and afford an insight into the diversified utility of this remarkable material.

One of the most remarkable and, at the same time, one of the most beneficent uses suggested for rubber, is for the construction of artificial or supplementary muscles for children suffering or threatened with infantile paralysis. By the local application of strips of elastic rubber over the weakened muscles, in a manner devised and described by Dr. Roland O. Meisenbach, Buffalo, N. Y., the tensile strength the muscle lacks is supplied, a local stimulus effected and contractions prevented, while the application being painless and not inconvenient and the effect being continuous and independent of the patient's volition, the remedy is especially applicable for children.

Carpet sweepers are equipped by a manufacturer with corner buffers, by means of which the furniture is protected from injury and they can be applied to either new or old sweepers. Another manufacturer employs rubber in the manufacture of a pad that protects table tops from defacement by hot dishes.

In the future development of the flying machine, rubber seems destined to prove an important factor. Rubberized fabric for planes has been given the preference by the most successful practical aviators, while the extent to which a safe and successful landing depends on the quality of the rubber tires with which the "plane" is equipped, has induced leading tires manufacturers to bestow particular attention on the production of "aeroplane tires."

In the form of hose, rubber comes into use in an ingenious machine, employed by paviors in Germany, for ramming or tamping paving blocks into place. The pneumatic ramming tool is connected by rubber hose with a portable air compressing plant, and the compressed air, acting on its mechanism, causes it to deliver a rapid series of hard blows on the paving stones that are being set.

Another use to which rubber hose is put is in the operation of an ingenious vacuum cleaner, for which a stream of water from an ordinary faucet furnishes the power. Passing down one arm of a Y branch, it creates, by suction, a partial vacuum in the other arm, and this in turn is connected with the cleaning tool. The dust laden air, drawn up the tube, encounters the water at the junction of the Y and the dirt is washed down the drain. Rubber tips for furniture; rubber toe-caps for shoes, rubber heels, rubber tiling for floors, rubber trays and dishes are made for photographers, while rubberized cotton fabric for balloons is much less expensive, lighter and more impenetrable than the water-proofed silk heretofore used. In addition to its extensive employment in tires, rubber has found very many uses in connection with the automobile; mats for the floors, pads for the pedals, hand grips for the levers, all are made of rubber, and to some extent it enters into shock absorbers and similar devices, to say nothing of the tubing for gas lamps, electrical insulation, hose connections for radiators, etc. It would be possible to enumerate a thousand and one purposes for which rubber in various forms is employed, that have been added, within the past few years, to its uses. It is a question whether, with all the additions that have been made to the output within the past few years, in the shape of plantation production, reclaimed rubber, etc., the "new uses" have not more than made up for the increase in production, so that, as far as the volume at the disposal of the consumers is concerned, there is but little improvement to be recorded.

PROTECTION OF THE PRODUCTS OF AMAZONIA.

(Translation from *A Provisancia do Pará*, April 7, 1911.)

THE *Provisancia do Pará* has dealt in detail with the matter of the rubber business, from the standpoint of protecting same against speculators who are doing their best to bear the market.

Not long ago we had an opportunity to give the details of the purpose of Congressman Dr. Justiniano Serpa's trip to Manáos, on behalf of Dr. João Coelho, Governor of the State of Pará, Dr. Serpa transmitting to the Governor of the State of Amazonas Dr. Coelho's intention of protecting the rubber business through the establishment of a banking institution.

This protection has afterwards been extended to all the natural products of the two States, keeping in the foreground, as the most important, rubber. Dr. Serpa transmitted yesterday to Dr. Coelho the results of his trip, as follows:

The basic ideas of Dr. Coelho were, with some modifications regarding the market of Manáos, entirely accepted by Colonel Antonio Bittencourt, Governor of the State of Amazonas. These ideas having thus been accepted, Dr. Coelho, as Colonel Bittencourt had done, decided to transmit to the market of Pará the resolutions arrived at, and, therefore, invited the Commercial Association to attend a meeting, which will be held today at 8, in the Governor's Palace.

The plan for protecting the products of the Amazonia consists chiefly in the establishment of two banking institutions, at Pará, and at Manáos, each with a capital of three million sterling, with separate boards of managers, but identical by-laws.

These banks will have a department of mortgages on country lands, to help farmers, also a department of discounts, for which purpose one-third of the capital will be set aside.

The governments of the two States will guarantee the interest of 6 per cent. (gold) on the capital.

In the plan there is also the idea of trying to get the backing of the Federal Government for a loan of six millions sterling intended for the standardization of the prices of rubber.

For interest and refunding on this loan the two States will, together, impose a duty of 400 Rs. per kilo of rubber exported, and will try to get the States of Matto Grosso and Goyaz to concur in the same duty, in order to standardize the selling conditions of the production of the four States.

Furthermore, the two States will issue laws to protect the planting of *hevea* and decrease the cost of production, also to ensure one quality only being exported—the highest grade—thus eliminating the intermediate and low types.

In due time the Assemblies of the two States will meet to discuss and approve these laws, also efforts will be made to obtain from the Federal Government laws conducive to the protection of the products of the Amazonia.

This is an outline of the plans submitted today by the Governor of the State to the market of Pará.

IN THE LITIGATION so long in progress, regarding the right to the use of the process of manufacturing and mounting solid rubber tires, on which United States Patent No. 554,675 was issued to Arthur W. Grant in 1896, the Supreme Court of the United States rendered an important decision on April 11. The court affirmed the decree of the lower court in the case of the Diamond Rubber Co. vs. the Consolidated Rubber Tire Co. and the Rubber Tire Wheel Co. and declares the Consolidated Rubber Tire Co. to be the exclusive owner of the Grant process rubber tire. The court holds that the fact that the defendant company uses the Grant tire and not the tire covered by the Willoughby patent, disposes of its contention that the Willoughby patent covered the purpose that the Grant patent sought to attain and that in using the Grant tire the company recognizes its superiority. The Diamond Rubber Co. is enjoined from manufacturing the product.

India-Rubber in Dutch Guiana.

By the Editor of "The India Rubber World."

FIFTH LETTER.

A Ride on the "Kolonial Spoorwagon."—The Wanica Canal and Lelydorp.—The Great Sand Savannah.—Balata Trees.—Through the Gold Fields.—Real Rapid Transit.—Convicts and Calabashes.—Off to Barbados.

NO matter how perfect a system of waterways a country may possess, one is apt to miss many interesting topographical features unless journeys are taken overland. I was, therefore, exceedingly pleased when I learned that the Balata Man and the superintendent of the *Kolonial Spoorwagon* had arranged an all-day journey by rail into the interior for us.

The railroad is a new feature in Dutch Guiana, being only four years old, and it enjoys a necessary government subsidy. In spite of the fact that five hours by rail means five days by water, boat rates are cheaper than transportation by rail and the waterways do the bulk of the business. The course of the railroad is midway between the Saramacca and Suriname rivers, following for much of the way a sandy reef that extends from the hill country nearly down to Paramaribo. This reef in two or three places stretches out into broad sandy savannahs, but for most part is bordered by rich clayey loams that under cultivation are wonderfully productive. The road was specifically to give easy access to the gold fields, but once the country is developed its possibilities in agricultural and other freights will be considerable.

We rose at 5 in the morning to prepare for our journey, and after early coffee we made our way to the railroad station (*vail-*

lantsplein), which was quite near the hotel. We were early, partly because we were doubtful of the correctness of the hotel clock, at least as far as its agreement with the railroad time went. Many others were early also, and the long station platform was crowded with negro men and women, and coolies, with here and there a white man. The negroes were full of excitement over the prospect of a ride in the train, and were jostling, laughing and

joking, and constantly getting in everybody's way. As this train (*trein 5*) runs only once a week, it is still a novelty to the community and most of the dark population assemble to see it start and to cheer it on its way. Back in the interior the Indians walk scores of miles to the railroad track, wait patiently until the train passes, then go back to their distant homes, fully satisfied with the result of their journey.

The train was "mixed," made up of flat cars, several third class coaches and one mail and parcels carriage and first class coach. The one locomotive was of the typical German type and the coaches similar to those used in Europe, except that above the windows were broad wooden awnings as a protection against the mid-day sun and the heavy rains. One half of a first class car was reserved for our

party of four, or rather five, for the young Dutch negress who was to act as caterer for the party certainly counted as one, and her arrival, accompanied by coolies laden with fruits, tea-making paraphernalia, water cooler, etc., was viewed by us all with great content. She had an open compartment all to herself, and in



WILD HEVEA GUYANENSIS IN THE GOLD FIELDS.



THE BANANA BOAT OFF NEW AMSTERDAM

spite of the fact that this was her first railroad journey, she did not forget to buy the best bananas at the lowest market price, the ripest *grenadillas*, or to supply all of our needs, deftly, quietly and with the most respectful, dignified courtesy.

After much good-natured confusion, the third-class coaches were filled with their freight of animated ebony, the superintendent wished us *bon voyage* and gave the signal to start, and incidentally it was on schedule time to the second. To the accompaniment of the clanging bell that gave out a peculiarly solid tone, and the shrill warning of the whistle that blew at every street, bridge and curve, with minor salutes between, the train pulled out of the station, ran down the main street through the whole length of the town and out into the open country. The streets were lined with sightseers and every window was a frame for dusky faces, the train being the object of their interested regard.

The roadbed was excellent and was ballasted with white sand taken from the great deposits in the interior. The day was cloudy and the white ribbon of road did not try the eyes in the least bit, but when the sun shines, engineers, conductors and many passengers wear colored glasses to guard against the fiercely reflected rays from this white roadway. We were so comfortable in this slowly moving train with its speed of 20 miles an hour that it did not seem possible that we were within five degrees of the equator, but those who built the railroad appreciated it. At the great sand savannah which covers some thousands of acres, the heat was so intense that day work was abandoned and all of the grading and track laying was done by the coolies, who worked through the cool damp of the tropical night and slept through the day.

Shortly after leaving the city we passed the site of the projected Dutch Settlement Colony, a pet plan of the government, the idea being to offer homes to a large number of Dutch col-

onists. It does not find favor among the residents of the colony, as they claim that the descendants of Europeans if born and bred in the tropics, do not show the stamina or enterprise of their parents.

We passed several cattle ranches, but this is not a particularly good cattle country, as the native tigergrass affords little nutriment. The course of the road was marked by innumerable flag stations, consisting of a few native huts, a diminutive store and a church. The huts were quite picturesque and even when thatched with palms had a suggestion of Dutch architecture. In them the coolies or negroes lived, with a cow and numerous chickens, in perfect content.

A little way out of the city we crossed the great Wanica canal, which connects the Suriname and the Saramacca rivers. The first station for stopping was Lelydorp. Here we passed the down train and paused while crowds of coolies and Dutch negroes crowded about with baskets of fruit at ridiculously low prices. The negroes in the rear cars bought cocoanuts and bananas as long as their money lasted, the transaction accompanied by much gesticulation and many wordy battles. After a long interval our train slowly pulled out and the journey was continued. Although the country was nearly flat it was not uninteresting, for we passed through heavy forests, the large trees bound together by bushrope and decorated with orchids and epyphites. On either side of the single track the constantly encroaching bush was cut back, and often drains from eight to ten feet deep were dug in the clayey soil to carry off the water that in the rainy season would otherwise leave no vestige of track or road. We crossed many little streams, some running bright and clear, others as black as ink. The flowers along the way, although not appearing in great profusion, were gorgeous. Notable among them was the scarlet "parrot's tongue," which the coolies say betokens rich soil.

We crossed a branch of the Para river at Republick, a neat



WHERE THE STEAM CARS LEAVE PARAMARIBO.



VILLAGE ON THE PARA RIVER.

little community that was once a garrison town where fifty Dutch soldiers held a great force of negroes and Indians in check. Here we took on wood and water for our engine. Then on, by little cassava fields, banana and cocoanut plantations, to Kwakoegro, where we had a "twenty-minute" stop which lasted an hour. During this wait we walked over to the Saramacca river to see the great hardwood pier where much river freight is handled. Here railroad and waterway come into open competition and the latter always wins. Passengers and freight from the gold fields come down the railroad to this point because they have no other means of transportation. Then they transfer to take a five day boat trip to Paramaribo rather than a five hour train journey, because it is cheaper. Not that the railroad rates are exorbitant or prohibitive, but that the water rates are phenomenally low. Besides, any negro gold digger who did in five hours what could be done in five days would be outraging every procrastinating instinct that makes him what he is, or rather what he is not. If the river boats were really alive to the desire of their patrons they would arrange that the trip take twenty days instead of five.

A great many things along the way puzzled us more or less, but we figured them out the best we could without asking too many questions. We wondered, to be sure, why a man should label his hen coop "*Te Koop*," as it was easy to see what it was. It was only when we saw a fine Dutch bungalow thus labeled that we asked questions, and learned that "*Te Koop*" meant "For Sale" and not "The Coop."

It was along near here somewhere that there were great cotton plantations some fifty years ago. They were abandoned, however, as the planters found more profitable use for their labor in sugar and coffee. The reason for the long wait at this station became apparent when a white-clad figure appeared far down the track, and on nearer approach turned out to be an engineer whose duty it was to patrol the track in a handcar run by gasoline. His motor had failed, and with visions of train wrecks and dire disaster to spur him on, he had run a mile through the blazing sun to save us. As we often reached the frightful speed of 20 miles an hour and averaged more than 10, and, moreover, it was broad daylight and the track was a straightaway, the peril was imminent and his Carnegie medal will doubtless reach him in due time—by river boat.

This railroad, although running through the bush (and to those who are not familiar with the term "bush" I will explain that it means jungle or forest often of the heaviest growth), has many of the accompaniments of the better class of tropical railroads the world over. The grades were easy, the roadbed nearly perfect, the stations clean and orderly, the officials courteous, and there were no offensive loungers. Oftentimes the station platforms were crowded with passengers and their families, even down to the third and fourth generation, but they were either there on business, as respectful sightseers, or as an enthusiastic backer of a friend or relative who had secured money enough to pay for a twenty-mile ride and courage enough to walk back.

We dropped two cars at Kwakoegro. A little beyond the station we began to run into hilly country and passed through occasional cuts that showed the red and yellow clays, some beds



A VIEW OF THE UPPER SURINAME.

of kaolin and ledges of sandstone. Balata trees began to be in evidence, and after they were once noted were very easy to recognize, as they present a different appearance from almost any of the hard woods of which these forests are composed. The trees grow to a great height, oftentimes with 60 feet of straight trunk before the branches appear. The bark is a gray-black in color, rough in texture and at a distance looks not unlike the American ash. The leaf is very much like the *Ficus elastica*, while the tree crown with its many spreading branches has much the appearance of the white oak. Many of the trees, or more accurately, some of the trees, had been tapped, but very many of them had not been touched. We saw very few birds or animals of any kind—a few hawks, macaws and parrots, one small alligator and big bushspider were all—and soon we came to Guyana placer. Here most of the passengers left us, as they were bound for the gold fields, which lay but a short distance away. They were greeted by a crowd of miners, white and black, who had come down to meet the train and to collect supplies, letters, and whatever was brought up to them from the outside world. Further on we ran close to some of the placers, one in particular where a huge dredge was being set up, an attempt to get the gold out with a bit of American hustle, instead of the slow panning by hand, generally indulged in.

I ought to say that our train was now a special, consisting of one car and the engine, a courtesy that the superintendent of the road paid our party that we might penetrate into the interior as far as the rail went. So we went on, past deserted balata camps (the tree was fruiting and the latex does not run then, so the gatherers say), through railroad camps that a year ago were humming with life, but now abandoned, stopping at various placer stations, and we finally reached the terminus of the road in a pouring shower. We had planned to go out into the bush here and see the gold mining at close range, but it was too wet, so we lunched comfortably on board and started back.



THE SPECIAL TRAIN.



AN AVENUE OF COCONUT PALMS



DUTCH NEGRO HOMES, OUTSKIRTS OF PARAMARIBO.

On the return journey our car, placed at the rear of the train, having a broad covered rear platform, made an ideal observation car. There were two flat cars in front of us, and from time to time we picked up hand cars and their crews. It was very interesting to see a crew of these negroes pick up a hand car and, holding it chest high, discuss for five or six minutes the best place to put it, and any other points that occurred to them as important at that moment of relaxation!

We got a surprise at Kwakoeagro when the train stopped outside of the station and a police official invited us to accompany him to the searching rooms. It seems there is a government tax of about $\frac{3}{4}$ of 1 per cent. assessed upon gold, and people coming from the gold fields are searched. I do not know what they did to the others, but the searcher simply patted my breast pockets, grinned with great amiability, and said, "A' right," and bowed me out. In the case of the natives, however, the search is very rigid and needs to be, for the negroes conceal gold wherever they can, their kinky hair being a favorite hiding place. The negro women often dress their hair with a gummy substance that makes it very nearly impenetrable. When this happens the searchers

know that there is gold inside and they patiently work away at the kinky head and wash the gold out.

Night fell, but with a clear track and no more stops we rushed along the white road, sometimes going 35 miles an hour! As we entered town with clanking bell and whistle going every minute, we found the streets crowded even more than they were in the morning. A train never before had arrived there at night, and the engine with its headlights and cars brightly illuminated was a fascinating novelty and we were greeted by cheers. As we drew into the station the superintendent met us and asked how we enjoyed the journey, and although it was our special that made the train late, he apologized for not bringing us in on schedule time.

It had not occurred to me that in Dutch Guiana we were close to the penal settlement in French Guiana, and that Devils Island was but a short distance away. A suggestion of this nearness came about in this manner.

I had seen some beautifully carved and ornamented *calabashes* and sent word to the artist, a Frenchman, that I wanted some. In due time he appeared with a great variety of carved *calabashes*, a model of the guillotine, and

various knickknacks, such as convicts all over the world are forever making and selling. Then I knew that he was a fugitive from the penal settlement in French Guiana. It seems that some prisoners do escape and make their way with incredible suffering through the bush to throw themselves on the mercy of the Dutch. To the lasting credit of the inhabitants of Suriname be it said that these fleeing prisoners are rarely returned unless they prove themselves hopelessly criminal. Indeed they are given employment and medical attendance if required and a fresh start in life. Nor do the French officials protest, possibly because the escape is rarely reported, and, so it is gossiped, the prison officials still charge the home government the pittance that is supposed to represent the prisoner's board and lodg-



PLACER MINING, SURINAME GOLD FIELDS.

ing. Not all of those who escape survive, however. The jungle road is said to be strewn with the bones of those who, though strong enough to make the effort, were too weak to persevere, and who lay down and died, their faces turned toward freedom.

At length, much too soon, the day of departure from hospitable, fascinating Suriname arrived. After giving mod-



GOLD MINERS CAMP "DIEU MERCI."

erate tips to the surprised and grateful servants at the little hotel, and being thanked with deep and respectful curtsies and with wishes for a safe journey and a prompt return, we drove to the house of the Balata Man, who insisted in taking us out to the steamer in his own launch. Although it was "mail day" and he was patently busy, he tarried for lunch aboard the steamer and then departed before we had half told him and his charming wife how pleasant and profitable they had made our stay. Soon after this the great banana barges drew away, the anchor came up and, slowly turned by the outgoing tide, our boat's head was pointed north and the homeward journey begun.

[THE END.]

INDIA RUBBER AND BALATA IN DUTCH GUIANA.

(By Our Regular Correspondent.)

THE imports of *Hevea-Brasiliensis* rubber seeds in 1910, for the greater part from Ceylon by private planters and the aid of the botanical station, amounted to far over "a million seeds." The germination, though guaranteed to be over 70 per cent., was, as a rule, not entirely satisfactory, and I fear to overstep the limit of the safe side when I put the figure at 35 per cent.

From now, however, Surinam is able to supply *hevea* seeds from her own trees and even sell seeds and stumps to Demerara. A local planter made a contract to sell quite a number to our English neighbors.

Voorburg, Clevia, de Nieuwe Grond and Clarenbeek were among the first to send small consignments of plantation rubber to Europe and the United States. The reports on it were favorable. The first four cases of our wild rubber—*Hevea Guianensis*—went to your side.

Our Forest Department is trying to develop this industry in our "Boven Para District." The negroes there still laugh at it, but some Japanese and Frenchmen were already able to tap and prepare the wild rubber at 60 (American) cents a pound, and

make two pounds per working day and are happy and stick to it.

The Surinam balata industry has had a record year, as may be gathered from the fact that the imports have increased from 365.2 pounds in 1881, when the trade had its commencement, to 893 tons in 1910, compared with the next largest year's shipments, 630 tons in 1909.

The January, 1911, issue of THE INDIA RUBBER WORLD had a very interesting article, by the editor, on his visit in Dutch Guiana to the "balata man" in Paramaribo, and he will not be surprised to learn now that the balata business of Maj. J. G. van Hemert and Henri Benjamins, LL. D., has been taken over by the "Balata Compagnie, Suriname," Ltd. The capital of this company is 2,000,000 florins (\$800,000). Directors are leading rubber men in Antwerp and Rotterdam. The representative in Paramaribo will be Mr. Henri Benjamins. We learn, from the prospectus, that the new company has taken over the whole interest of the gentlemen named, and their concessions and exploitation for 1,050,000 florins in fully paid up shares.

Subscriptions have been invited for 1,300 shares in 1,000 florins, of which 500 shares were already placed. The balata exports of the firms mentioned, have grown from 144 tons in 1905 to 365 tons in 1909, or a little over half the total exports.

According to the books of the firm the net revenue of their business has been:

In 1905	fl. 97,295
1906	101,680
1907	145,279
1908	121,128
1909	183,552

The minimum guarantee for 1910 is.....180,000

The crop for 1911 is already sold for a higher price than that of 1909. Above stated net revenue was earned after making the necessary deductions. The exploitation of balata is accompanied by the making of advances to the "bleeders" or tappers, which advance must be regarded up to a certain amount as "funds sunken." During the exploitation there has been written off and figured in the balance as pro memoriam a sum of 336,678 florins, of which amount, perhaps, one-third, or 120,000 florins, will still be receivable. The items to be taken over, according to the balance of December 31, 1909, are:

a. Advances for the campaign, 1910.....	fl. 344,410.08½
b. Goods in different depots, food and clothes for the laborers	62,043.04½
c. Stationary properties, wharf Loekibaka at Paramaribo, river frontage of 125 yards, with stellingen, storehouse building, wood, and stores in Nickrie Tibiti and Saramacca river.....	95,207.11
d. Steamboats "Ellen" and "Helenä," with canoes, paddles, etc., etc.....	18,940.10
e. Carts in Surinam, debentures, etc.....	15,139.64
f. Balata already in Europe.....	13,149.18
g. Advances in earlier campaigns, 336,675.....	pro memoriam

fl. 548,889.16

Add guaranteed net revenue by vendors for 1910....180,000.00

fl. 728,889.16

Less one dividend, creditors.....258,523.34

Remainsfl. 470,365.82

With the capital already in the business, the guaranteed profits of 1910 and the remaining 250,000 florins of the subscriptions, the new company will have ample capital. The 700,000 florins, in shares, remain in porto folio for eventual extension and development of the company.

The reasons for Mr. van Hemert and Mr. H. Benjamins sell-

ing their business are strictly personal; both gentlemen have willingly assisted the new company with their experience in connection with the board of directors.

I think this a very important factor as success in balata business depends entirely on the knowledge of the country and on knowing how to deal with the people and the balata bleeders.

As the directorate and the company are entirely Dutch or Belgian, the prospects are that all the balata produced will go to Europe. The remaining half of the Surinam balata sheet exports are in the hands of two, say three other balata firms.

News of the flotation of the Balata Compagnie, Suriname, referred to in our Dutch Guiana correspondence, was received with much interest in Rotterdam and in Antwerp, and the company's shares went up to 162. Amsterdam remained indifferent.

Inspired, however, by the success of the Balata Compagnie, there has since been floated in Amsterdam, the "Amsterdam Balata Compagnie," with a capital of 1,500,000 florins (\$603,000). Col. G. W. Ling, from Denierera, was the promoter. A large concession, or balata grant of 2,000,000 acres, was bought in for the company for 800,000 florins (\$321,600).

THE APPROACHING RUBBER EXHIBITION.

FROM time to time, THE INDIA RUBBER WORLD has published information of interest to its readers, relating to the various competitions, to be held in connection with the International Rubber Exhibition that will be opened in London in June, accompanied wherever possible, by illustrations of the prizes or trophies, offered as awards.

Some interesting additions have recently been made to the number of these contests. The Kolonial Wirtschaftliches Komitee, of Germany, has offered the Gold Medal for Services Rendered to Colonial Economic Development, for the best process and method of extracting, coagulating and preparing rubber from Manihot, Kickxia and Ficus.

Private individuals, companies or institutions of any country that has a display at the exhibition, as well as the governments of such countries, can take part in this competition. Competitors must show their methods at the exhibition, by the display of samples of prepared rubber, which shall weigh not less than ten pounds, together with samples of the tools and appliances used, with full and detailed descriptions and drawings or photographs, showing the processes by which the rubber is extracted, coagulated and prepared. The judges are to have the right of testing every sample, tool or appliance entered, and their decision is to be final and without appeal. The competing exhibits will be assembled in one group, suitably distinguished, and the medal will be the absolute property of the successful exhibitor, and will be formally presented to him at the International Exhibition Dinner, to be held in London during the course of the Exhibition.

All entries must be made to the Award Committee International Rubber and Allied Trades Exhibition, Ltd., 75 Chancery Lane, London, W. C., by Thursday night, June 1, 1911, and should be sent by registered mail or delivered by hand, so that a receipt may be obtained for them. Exhibits for competition, properly designated, must be sent direct to the Award Committee, Royal Agricultural Hall, Islington, London, N., and should reach that building not before June 15 and not later than June 25. On all exhibits so sent, the full transportation charges must be prepaid.

Another competition has just been instituted by the ASSOCIATION des PLANTEURS de CAOUTCHOUC, who have presented a silver bowl, value 1,000 francs (\$190), to be awarded for the best sample of plantation rubber grown in the Dutch East Indies. Full particulars in regard to this competition can be obtained from the offices of the Exhibition, at the above given address.

The West India Committee has presented two silver cups, which will be awarded (1) for the finest sample of prepared plantation rubber of any species and (2) for the best specimen of balata. The specimens must in each case be sent over with the exhibits of one of the Permanent Exhibition Committees.

The following request, sent out by Mr. A. Staines Manders, manager of the Exhibition, will explain itself and is commended to the attention of all those who contemplate participating in any of the competitions:

"It will facilitate the working arrangements in connection with the competitions, if those who propose to enter will send their nominations by post as early as possible, and not keep them till the last moment. Every entry is treated confidentially, but it will mean considerable additional labour if the entries are not sent in till the closing day. There is a large amount of detail to be arranged regarding these competitions, and it is for this reason I ask all who intend to enter to please favour me with their entries direct by as early a post as possible."

There being no entrance fee or other charge accompanying these entries, it is reasonable to urge on intending competitors, the propriety of complying, as far as possible with this request, by making their entries and sending in their exhibits as early as possible within the specified period. On application to the offices as above, printed address labels, of a distinctive color, can be obtained, the use of which will obviate any risk of the consignment going astray and ensure it reaching the proper officials.

Owing to the coronation festivities in London, the period of duration of the International Rubber Exhibition to be held in that city this year has been somewhat changed. The opening, to which the press and holders of cards (exhibitors and members of committees will be admitted), will take place on Saturday, June 24, the official opening on Monday, June 26, at noon. The exhibition will be open daily, with the exception of Sundays, from 11 o'clock a. m., until 10 p. m., and will close on the evening of July 14, not as originally planned on July 11.

The attention of intending exhibitors is called to an arrangement whereby they can have invitation tickets printed bearing their own advertisement or any other appropriate device, for distribution among their friends. The proof of such ticket must first be submitted for approval and all such tickets taken up at the door must be reclaimed by the exhibitor issuing them, at the rate of 25 shillings (\$6.08) per hundred. They will also be furnished without the exhibitor's advertisement, or can be purchased at the rate of four shillings (97.30 cents) per dozen. The official printers, of whom special information, quotations for printing, etc., can be obtained, are Hill, Siffken & Co., Grafton Works, North Road, Holloway, London, N.

A list of hotels, from which the exhibition is conveniently accessible, with their terms and means of reaching the exhibition from them, has been issued by the management of the exhibition and can be obtained on addressing the offices, but intending visitors, to ensure securing accommodations, should make early application, as owing to the Coronation ceremonies, which will occur in June, London will be fairly crowded for a goodly portion of the period for which the exhibition will be open.

Arrangements for the insurance of the property of exhibitors, from the time of leaving the place of shipment, including risk in transit and at the exhibition, and until delivered back at final destination, may be made through Messrs. Tozer, Kemsley & Fisher, Ltd., insurance brokers, 84 Fenchurch street, London, E. C. If preferred, the exhibits can be insured, while at the exhibition only, against "all risks," or against "fire risks." Forms of proposal and all other particulars may be obtained of the firm as above.

The United States Consul General at Berlin, Germany, reports Germany's imports of rubber-shoes for the year ended June 30, 1910, at 611 tons, valued at \$645,694. The exports during the same period, were 107 tons, valued at \$83,776.

The India-Rubber Trade in Great Britain.

By Our Regular Correspondent.

IT HAS been repeatedly urged in late years—more particularly by analysts—that the buying and selling of raw rubber ought to fall into line with the procedure adopted in the case of the bulk of other raw materials and be controlled by the analyst's certificate. Up to now, however, no progress at all has been

THE TESTING OF RAW RUBBER.

made with the maturing of the suggestion and it is with much interest that I have seen a translation of the scheme put forward by the Dutch Government Bureau for the India Rubber Trade and Industry to practically test the applicability of chemical analysis for this purpose. For three months samples of raw rubber will be tested free and certificates of analysis returned to the sender along with a part of the rubber for use as a sale sample. In the case of plantation or fine Pará or of sheet balata the taking of an average sample both from bulk and in the laboratory should present no great difficulty, but I venture to say that the reverse will be found to be the case with medium and low grade rubbers. The Bureau lays stress on the importance of sending an average sample, though presumably this operation is to be left to the untutored mind at the docks or warehouse. It will be absolutely necessary for the Government to appoint sworn samplers. The alternative to this is the joint sampling by the seller and an independent sampler appointed by prospective purchasers. In saying this I am not making any attack on prevailing commercial morality; I am merely arguing from the general situation in the numerous other cases where raw products are bought and sold on the analysis of what is certified to be a bulk sample. In a good many cases most of the unpleasantness between buyer and seller is concerned with the percentage of water in the goods, and I imagine that this phase will be accentuated in the case of raw rubber. In the case of dry rubber from plantations the moisture question may not become at all acute but a large amount of work will have to be done with such rubbers as contain over 10 per cent. of water before any procedure can be devised which will give results which will be accepted with equanimity by both sides to a sale. With regard to the Dutch development it is distinctly stated that it is being undertaken solely as an experiment and those concerned merely wish to see if the results are such as to commend the new procedure to the notice of the trade. So far the investigators of the movements profess an open mind and in these circumstances nothing should be said or done to discourage them in their course of action. It is inevitable, however, that the scheme will provoke criticism as being in the form of a radical departure from time-honored methods.

This company, whose works are situated in Trafford Park, Manchester, near to those of the British Westinghouse Co.,

RUBBER REGENERATING CO.'S SECOND.

Limited, is now largely extending its premises in order to meet the increased demand for its products. The concern is a branch of a well-known Chicago factory, and the English works, which were started two or three years ago, were the direct outcome of what is known generally as the Lloyd George Patent Act. The actual capital of the English company is only £1,000 and it is understood that this will shortly be increased. Mr. Mamsick, who is well known in America, is the general manager and the products are put on the market entirely through Messrs. Somervilles' Sons, of Liverpool and New York. The process is controlled by Price's patents of 1901 and 1904 in which alkali is used, and an objection has been raised by the Northwestern Rubber Co., Litherland, Liverpool, owners of A. H. Marks' patent of 1899, on the score of infringement.

The company have had the action pending for some time without entering it for trial and in order to bring things to a head the Regenerating Company applied to the Chancery Court at Liverpool that particulars of the alleged infringement should be given or the action abandoned. As a result of the application, the vice-chancellor directed the Northwestern Company to give particulars of their complaint. The next scene in the drama will be awaited with interest; anyhow, no further prolonged delay is possible—the action must proceed or be abandoned.

Mr. J. G. GRAY is the new works manager at the Gorton Rubber Co., Limited, Manchester. Mr. Gray comes from the Dunlop

PERSONAL MENTION AND TRADE JOTTINGS.

Rubber Co. at Birmingham, where he has been for a number of years. Mr. Saunders, the late works manager at the Gorton Rubber Co., has gone to the Werneth Rubber Works. These works were offered for sale at auction by Mr. Salmon, the proprietor, two or three years ago, but were withdrawn. Recently a new company has been formed. The works were originally started by Mr. Cresswell when he left the Hyde Imperial Rubber Co., in the same neighborhood.

Mr. Walter Wild, who comes from the Liverpool Rubber Co., is the new manager at the Wood-Milne works recently erected at Leyland, Lancashire, as previously mentioned. The scope of operations of the Wood-Milne Co. is being extended beyond the well-known heel-pad to mechanical goods and tires.

The increased capitalization of the Midland Rubber Co., Limited, of Birmingham, is due to the fact that they have at last got possession of some house property immediately adjoining their works at Ryland street. This acquisition, about which there has been considerable difficulty, makes it possible to enlarge the works to meet the requirements of the increasing business. The general manager is Mr. J. P. Higgins. The patent in this country of the Doughty high-temperature vulcanizing press, which has been the property of the Dunlop Rubber Co., has recently lapsed and machines are now to be seen at work in competitors' works. Saving of time in the manufacture of cycle tire covers is its principal advantage.

In the course of the expert evidence given in connection with a recent breach of contract just tried in the Manchester Court of Assizes some discussion arose in regard to over-vulcanization and under-vulcanization, a prominent witness who graduated in America laying it down that although uniformity in vulcanization can be expected in goods mostly composed of fine Pará rubber, this is not the case with low quality sheeting, a fact, he said, which is well known to purchasers generally. To give the expert evidence at length would require too much space.

REGRETTABLE AS ARE THE DISASTERS, a compound of several instances by the loss of valuable lives under deplorable circumstances, that have accompanied the development of aerial navigation, they are no more than we are accustomed to look for in connection with every such radical departure from familiar conditions as are involved in aviation. That they are likely to prevent, or even retard progress in this field, we regard as exceedingly unlikely, rather they may be expected, by supplying the necessary experience on which to base future operations, to encourage the development of the art. We look for notable progress in aviation during the present season, the fact that American manufacturers are beginning to turn their attention, to an increasing extent, to the supply of the bird-men's requirements, being further evidence of the practical confidence with which the ultimate triumph of the flying man is regarded.

RUBBER RECLAIMING LITIGATION IN GREAT BRITAIN.

THE IMPORTANCE attached to successful processes for saving rubber was indicated in an account of impending litigation in Great Britain over patents applying to measurably successful processes of reclaiming, or, as it is designated in England, "reforming" rubber. Our correspondent anticipated active and protracted litigation between the owners of some of these processes, based on their alleged infringement, the invalidity of the patents, etc., but recent information would seem to discredit such a possibility.

The Simplex Rubber Co., Limited, London, who were quoted as one of the probable parties to the anticipated litigation, in a recent communication deny that they are interested in any legal controversy that is likely to mature at an early date. On the other hand, the Gare patents, of which they are the owners, and which they use in their manufacturing processes, emerged triumphantly from attempts made to prevent their issue, on the grounds that they had been anticipated by patents previously granted to Kararodine, on a somewhat similar process. After a careful comparison of the two inventions, as described in their respective specifications, the patent office decided that it would be clearly wrong to stop the granting of a patent in this case, and consequently issued the patent to T. Gare, on his process of "reforming" rubber.

The conclusions on which the comptroller general decided to issue the Gare patent, are of more than passing interest to inventors whose attention is bestowed on this subject, and we quote from them as follows:

"I find therefore that the process applicant desires to patent, comprises, as an essential feature, the placing of india rubber, under pressure, in a mould before it is subjected to heat, and that the opponent in no way describes such essential feature, and I cannot say that the invention in which this feature is essential is patented on an application, the specification of which does not mention this feature. Moreover, I find that the opponent's process comprises, as an essential feature, the heating of the material before compressing, or, in other words, compressing while hot, and that the applicant's process does not comprise any such feature. The fact that in carrying out each process, a stage is reached in which rubber in compression is being heated, would not justify me in finding that the process of applicant has been patented, as alleged."

The Simplex Rubber Co. (Ltd.) expresses perfect confidence in the originality and validity of the Gare patents, the process covered by them being employed in the manufacture of rubber goods of many different kinds and which they claim are equal in quality to the best produced anywhere.

They argue, moreover, that if a commodity for which there is so rapidly increasing a demand as there is for rubber, can be given, so to speak, two or more lives, by a process which enables articles equal in quality to the original to be made at a low cost, then an increase in the use of rubber for many purposes now prohibited owing to its cost will follow, to the ultimate benefit, not only of the community generally, but also of the planter and manufacturer.

REPORTING ON MARKETS ABROAD for American stationery goods, the United States Consul-General in London comments particularly on the American rubber band, which he describes as having won and maintained a hold on the British market by reason of its excellent quality and the conveniently graduated sizes in which it is manufactured. The English product is made only in stock sizes, with considerable variation between them. An interesting differentiation between the American and the English product is that the former is gray and the latter red.

LONDON RULES FOR RUBBER CONTRACTS.

IN contracts of five tons or over, buyers have the right to reject tenders of less than a ton, and in contracts of under five tons, any tender of less than half a ton, except, in each case, in completion of a contract.

When sold for monthly deliveries or shipment, each month a specified part of a month's delivery or shipment, to be treated as a separate contract.

Sellers must provide approximate weights at time of tender and furnish dock and wharf samples, which must be sent by the first sellers to the first selling brokers, whose name must be on the first and subsequent tenders as holding the samples. They must be freshly drawn dock or wharf samples and delivered intact to the first selling broker. Tenders to be good must contain the following information in addition to the name of first selling brokers, i. e., date of contract and price; marks and number of packages; ship's name and dock or wharf where rubber is lying; weight of sample; original or copy of arbitration award (if any). The stipulations provided for shall be deemed to be of the essence of the contract.

The constitution of the Arbitration Committee is next described.

Clause IV provides that when a parcel of rubber is sold under the standard description of "first Latex Hevea Brasiliensis plantation rubber of fair average quality in sheet and (or) biscuit and (or) crêpe form, as at present prepared" for a specified shipment or delivery or for shipment by a specified steamer and found inferior, or if any portion tendered shall be found inferior, buyers shall have the option of rejection and the quantity so rejected, whether the whole, or any portion, shall not constitute a delivery on the contract. Should the time for delivery have expired, the seller must be allowed three clear working days to replace the quantity rejected.

Clause V provides that when a parcel of rubber is sold with a guarantee of quality other than as specified in the foregoing clause for a specified shipment or delivery, and is found inferior, the buyer must accept the same with an allowance, provided the allowance in the opinion of the arbitrators, be not more than two pence per pound, or otherwise, as may be specified in the contract; but if the parcel, or any portion is rejected, the seller is to have the option of substituting guaranteed quality on the spot to fulfill his contract, within three clear working days.

According to Clause IV any parcel arbitrated on with or without an allowance, shall be tenderable on any contract for the same quality and buyers shall accept the same, with the original arbitration award, provided the tender is made within three months from the date of the original tender and the parcel has been left lying intact at a public warehouse.

Any claims under these rules must be made by the last buyer to the first selling broker within three clear working days of the last buyer receiving tender.

Final delivery, on any delivery or shipment contract, must be within 50 pounds of the weight contracted for.

The selling or buying broker guarantees the solvency of his principals in all contracts for rubber unless otherwise specified in the contract.

The rules, of which the above is a brief synopsis, are described as the "Rules and Regulations Governing Contracts for Plantation Rubber" sold under the General Produce Brokers Association of London Rubber Rules.

COMPLAINTS FROM PEDESTRIANS in London that passing automobiles, ploughing through puddles, sprinkle them with mud, have led to tests of a splash guard on motor busses and other vehicles in that city. They are made of a steel mesh and suspended from the hubs of the wheels, the bottoms reaching nearly to the ground. They were found to give effective protection and their compulsory adoption is under consideration.

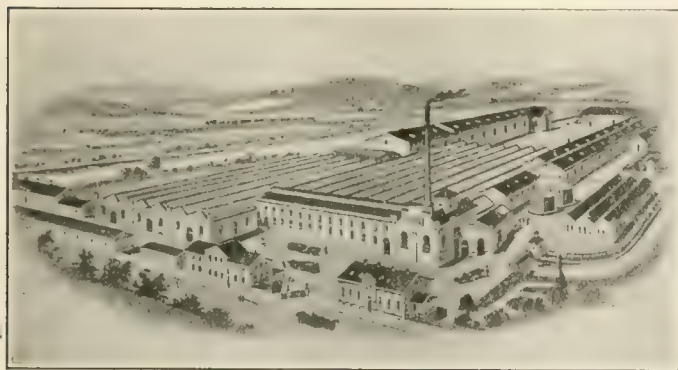
Some Rubber Interests in Europe.

THE DEVELOPMENT OF A GREAT CORPORATION.

THE Vereinigte Berlin-Frankfurter Gummiwaren Fabriken Gelnhausen, near Frankfort-on-the-Main, in a handsomely printed and artistically illustrated sixteen-page publication (12 x 18 inches) shows pictorially and describes in appropriate text, the growth of its immense plant from its first establishment in 1869, by Messrs. Bergeon, Boeger & Köbig at Frankfort-on-the-Main—Sachsenhausen, where they commenced, on a modest scale the manufacture of surgical and technical rubber goods, to the colossal plant of today, with its great factories at Gelnhausen, at Gross-Lichterfelde, near Berlin, at Grottau, Bohemia, and Dresden, Saxony.

A former mill, located in a spacious landed territory, was the nucleus of the present great plant at Gelnhausen, and as the business grew and various branches were added, the other plants were established; the Bohemian factory being established especially with a view to the supply of the markets of Austria-Hungary, Italy and the Levant.

Today, the capital of this great business, which employs about 2,000 workpeople and manufactures everything in the shape



VEREINIGTE BERLIN-FRANKFURTER GUMMIWAREN FABRIKEN.
(GELNHAUSEN WORKS.)

of technical and surgical goods in hard and soft rubber, is 3,500,000 marks (\$833,000).

The Vereinigte Berlin-Frankfurter Gummiwaren fabriken, Berlin, held its general meeting recently in that city, at which the dividend for the past year, payable immediately, was fixed at 9 per cent. The prices of raw rubber were represented as still unsettled and although the factories were reported as fairly busy, the prices of rubber goods were stated to be very low.

GERMANY.

The "Astra" Fabrikation und Vertrieb chem. pharm. Präparate, G. m. b. H., has removed its headquarters from Cologne to Bad Homburg.

Poppe & Wirt A. G., Berlin, manufacturing linoleum and rubber, report business satisfactory during the first year of its existence as a joint stock corporation. An 8 per cent. dividend is proposed and the listing of the company's securities on the stock exchange will be suggested to the next general meeting.

Nord Deutsche Gummi und Gutta percha waren-Fabrik, formerly Fonrobert & Reimann. At the general meeting, president Julius Klopstock referred at length to the unsatisfactory result of last year's business, which he attributed to the high prices of rubber, the effects of a strike, and to the fact that the necessary supply of crude rubber had not been provided for filling the contracts. The result, according to an actuary's report, was a depreciation of 180,000 marks in the company's financial standing since 1908. There were, however, said the

president, no grounds for apprehension as to the company's condition, and steps had been taken to prevent a recurrence of the unfavorable circumstances. The retiring member of the Board of Trustees, was re-elected.

Gummiwerke Fulda, Akt. Ges. For the second year of its existence, as a joint stock corporation, this company, after writing off 143,960 marks (\$34,170) reports the comparatively large deficit of 143,575 marks (\$34,170). Last year, the company made a profit of 101,896 marks, and paid a dividend of 4 per cent. Herr Fritz Cremer has been appointed a director of the company.

The jubilee celebration of the 25 years' active connection



WILHELM SIERCKE.

of Herr Direktor Wilhelm Siercke with the Hannoversche Gummi-Kamm-Co., Aktiengesellschaft, of Hanover, took place recently. He has been on the board of the company as commercial director, since the beginning of 1902.

Hannoversche Gummi Kamm Co., Akt. Ges. Frankfort-on-the-Main, has removed from its former place of business in that city to much more spacious quarters at Nidda Strasse, 74, near the main railroad station, where they will be able to carry a stock commensurate with their steadily increasing business. The Board of Directors recommended the distribution of a dividend of 25 per cent., same as last year.

Mannheimer Gummi-Guttapercha und Asbest fabrik A. -G. Mannheim, will pay a dividend of 10 per cent. The profits for the past year equalled those of the preceding twelve months, in spite of the increased price of raw rubber and the dissolution of the asbestos syndicate.

Deutsche Kabelwerke, Berlin-Rummelsburg. The directors have decided to pay a dividend of 8 per cent., as compared with 7 per cent. for last year.

THE HOUSE OF A. W. FABER, Stein, near Nuremberg, Bavaria, famous the world over as manufacturers of lead pencils, will celebrate, this year, the 150th anniversary of its establishment. To commemorate the event they are placing on the market a Jubilee pencil of exceptionally good quality and attractive appearance and they announce the fact in an illuminated folder of artistic design and execution, which they are sending to their customers and friends.

Verenigde Gumiwaren fabriek en Gummiwaren fabriek at Gotha. At the general meeting recently held, 831,000 shares were represented and the dividend, immediately payable, fixed at 15 per cent. It was unanimously resolved to increase the capital stock by 800,000 marks (\$190,400), making the total capital 3,000,000 marks (\$714,000). The additional 800,000 marks will not share in dividends until January, 1912, and 325,000 marks of the proceeds will be used for the purchase of the Frankfurter Gummiwaren fabrik, the balance to be disposed of to present stockholders at the rate of 6 to 1. Concerning the trade of the first quarter of 1911, it was reported that there had been an increase of 15 per cent. and that business was very lively. The directors, in commenting on the fact that speculation in crude rubber was declining, stated that this was probably due to the appearance in the market of large quantities of good plantation rubber, which competed actively with the Pará supply.

C. Mueller Gummiwaren fabrik, joint stock company, Weissensee-Berlin, at the recent general meeting, at which 362 shares were represented, fixed the dividend at 8 per cent. It was also decided to remove the company's headquarters from Berlin to Weissensee, where the entire business is now concentrated.

The Neue Automobilreifen Fabrik G. m. b. H., Berlin, has been dissolved. The liquidation was effected by the former managing salesman, Hans Below, of that city.

FRANCE.

The *Société Anonyme de Caoutchouc Manufacturé*, of Paris, which recently made an addition of 1,500,000 francs (\$28,600) to its capital, has declared a dividend of 20 per cent.

J. B. Torrilhon, founder and for many years head of the well-known firm of Torrilhon, and one of the earliest to engage in the rubber manufacturing industry in France, is dead, aged 87 years. The business will be continued by his two sons.

M. Lipschitz and B. Jacobowitz, have established a business as dealers in rubber waste at Montreuil-sous-Bois, with a capital of 20,000 francs (\$3,800).

Société Anonyme des Bandages Elastiques André, has been formed at Châtellerault, capital 500,000 francs (\$95,000).

The former manager of the Bordeaux branch of the firm of Poncin Dusendschön & Co., dealers in crude rubber, Paris, Mr. R. Van Baer, has severed his connection with the firm to start in business for himself. Henri Heilman, of the main office in Paris, has been placed in charge of the branch in question with full powers.

DENMARK.

Skandinavisk Gummiforg Cykel-Pneum. Andersen & Kloster Rubber and bicycle dealers, has been registered commercially at Odense. A. H. Andersen and J. S. Kloster, proprietors.

Kabelfabrik Aktieselskabet Nordiske Kabet og Traad fabriker, with factories in Copenhagen, Frederiksberg and Middelfart, has distributed for 1910 a dividend of 6 per cent., compared with 5½ per cent. in 1909, and 4 per cent. in 1908. In place of the deceased privy state councillor J. Glueckstadt, his son, bank director Emil Glueckstadt, has been elected chairman of the Board of Directors.

GREAT BRITAIN.

Cairns Tyre Co., Ltd., has been formed, with a capital of £80,000 (\$389,320), to carry on the automobile tire business heretofore conducted by J. Cairns & P. Collins, at Walsall. The company's specialty is a patent stud tire, which, while essentially pneumatic, obtaining its efficiency through confined air, is constructed on an entirely new principle, involving division of the air tube into sections, each with two or three air spaces.

Mr. J. W. O. Walker has resigned his position as general manager at the new works of the Wood-Milne Co., Limited, at Leyland, a step which has caused some surprise in the trade. It is not so many months ago that Mr. Walker gave up the position

of general manager at Messrs. Reddaway & Co., Limited, to take up the post he has just vacated at the new Wood-Milne works, where tires and mechanical goods are to be made in addition to the well-known heel pads.

F. REDDAWAY & CO., LIMITED (Manchester, England), manufacturers of camel's hair belting and sphincter grip hose, is represented in Mexico by Alfredo Lockhart; headquarters Puebla.

RUSSIAN ADVICE CONCERNING RECLAIMING.

TO THE EDITOR OF THE INDIA RUBBER WORLD. Sir, According to all accounts, the business of reclaiming rubber in America does not flourish, because the Russian rubber reclaiming works, of which there are only two in Russia, compete actively with them in Europe in the sale of reclaimed rubber, being able to purchase old rubber shoes at a less price than their American competitors.

When old rubber shoes are exported from Russia, an export duty of 1½ rubles per pood (77¼ cents per 36.11 pounds) must be paid on them, while on shipments of reclaimed rubber there is no export duty, consequently old rubber shoes cost the Russian manufacturer, in addition to freight and insurance, 1½ rubles (77¼ cents) per pood less than the American rubber works must pay for them, so that the Russian rubber reclaiming works can compete successfully in Europe with the American works in the sale of reclaimed rubber.

In America, the Russian rubber works cannot compete with the American rubber reclaiming works in the sale of reclaimed rubber, because the latter have managed so that America levies a duty on reclaimed rubber.

That, however, about fifty American rubber reclaiming works allow themselves to be crowded out of the European market by two Russian rubber works is hardly credible.

The associations of American rubber reclaiming works are constantly holding meetings and endeavoring to force down the prices for old rubber; it would have been much more sensible on their part if they had united to use every effort to obtain the repeal of the Russian export tax on old rubber shoes.

If the American government cannot succeed in effecting this result through the Russian government, they should endeavor to influence the German government to get this change effected in Russia. America could induce Germany to do this, with the alternative of placing an import tax on various German products.

Germany can compel Russia to allow the exportation of old rubber shoes without duty because, in the Russo-German tariff agreement of July 15-23, 1904, under Section 11 it places the export tax on rubber waste at 1½ rubles per pood (= \$2575 per 36.1130 pounds) but this cannot be held to include, in any case, old rubber shoes.

On the 7-19 March, 1906, the Russian customs bureau has decided that old rubber shoes should come under this classification and that an export tax of 1½ rubles per pood should also be collected on them, but this is improper; first, because old rubber shoes cannot be classed as rubber waste, then again the Russian customs bureau had no right to make such a decision in 1906, because the tariff agreement with Germany had already been entered into in 1904.

Consequently Germany can very easily put this through, if America will induce them to do it.

The export tax on rubber wastes has been brought about in Russia by two Russian rubber works; is it not possible for fifty American rubber reclaiming works to induce their government to aid them in this respect, the more so as the Russian customs bureau had no right to order, in 1906, that an export tax must be paid on old rubber shoes?

If the Russian rubber works have in this manner worked against the American rubber reclaiming works the latter should not hesitate to work against the Russian rubber works.

A. IVANOW.

St. Petersburg, 22 January (4 February), 1911.

Recent Patents Relating to Rubber.

UNITED STATES OF AMERICA.

ISSUED MARCH 7, 1911.

- N**O. 985,780. Rubber footwear. M. C. Clark, Providence, R. I.
 985,811. Shut-off for hose. D. S. Kellam, assignor of one-half to C. T. Lemmon—both of Atlanta, Ga.
 985,884. Anti-skidding vehicle-wheel. M. Clark, Chicago, Ill.
 985,935. Tire armor. H. M. Ramsay and A. McTiary, assignor of one-third to J. W. Campbell—all of Houston, Tex.
 986,007. Shield for vehicle-tires. J. E. Joslen, Los Angeles, Cal.
 986,049. Puncture-proof tire. T. M. Eynon, Philadelphia, Pa.
 986,050. Puncture-proof tire. Same.
 986,081. Nipple attachment for rubber hose. J. S. Patterson, Chelsea, Mass., assignor to Revere Rubber Co., Boston, Mass.
 986,162. Manufacture of sheet india-rubber. T. Gare, New Brighton, England.

Trade Marks.

- 46,238. Miller Bros. Star Shoe Co., Cleveland, O. The word *United*. For boots and shoes.
 52,865. Akt. Ges. Fur Seil-Industrie, Mannheim, Germany. The word *Epata*. For mechanical goods.

ISSUED MARCH 14, 1911.

- 986,452. Vehicle-wheel. H. C. Gibson, New York.
 986,543. Billiard-table cushion. J. S. Burroughes, Seaford, England.
 986,637. Inner tube. J. T. Lister, Cleveland, O.
 986,670. Vehicle-tire shoe. T. F. Baldwin, New York.
 986,712. Vat-washing-machine ring. H. Hipp, Staufen, Germany.
 986,930. Tire. V. O. Mervine, Stroudsburg, Pa.
 986,948. Resilient wheel. E. S. Shanklin, Oakland, Cal.
 987,009. Wheel. V. O. Mervine, Stroudsburg, Pa.
 987,026. Hose-coupling. H. W. Thomas, Charleroi, Pa.
 987,047. Detachable rubber heel. C. H. Chapman, Winchester, Mass., assignor to Chapman Detachable Rubber Heel Co., a corporation of Maine.

ISSUED MARCH 21, 1911.

- 987,216. Metal rim for vehicle-tires. J. C. Cole, assignor to The Fisk Rubber Co.—both of Chicopee Falls, Mass.
 987,230. Hose-patch and applying-tool. B. Hoover, assignor of one-third to J. M. Slaughter, both of Meridian, Miss.
 987,292. Tire. W. D. Furey, assignor of one-half to W. T. Anderson—both of Norfolk, Va.
 987,344. Tire and tire-carrying rim. J. S. Clarke, London, England.
 987,523. Tire-saver. L. Willour, assignor to The Ashland Mfg. Co.—both of Ashland, O.
 987,668. Vehicle-tire. E. C. Bruen, Brooklyn, N. Y.

ISSUED MARCH 28, 1911.

- 987,751. Cushion-tire. A. W. Shank, assignor of five-sixteenths to each, A. P. Mott, W. W. Tackabury—all of Detroit, Mich.
 988,045. Cushion-tire. D. J. Thayer, Pittsburg, Pa.
 988,060. Heel. L. Andrews, Newton Upper Falls, Mass.
 988,085. Resilient tire. C. A. Fox, Taft, Cal.
 988,201. Elastic wheel. J. C. MacLachlan, assignor of three-fourths to A. P. Hunt both of Chicago, Ill.

Trade Marks.

- 49,917. The Fisk Rubber Co., Chicopee Falls, Mass. Letter *F*. For pneumatic tires for vehicles.
 52,637. The Canfield Rubber Co., Bridgeport, Conn. The word *Tricot*. For rubber washers.
 52,951. C. A. Daniel, Philadelphia, Pa. The word *Dreadnought*. For rubber vehicle tires.
 53,708. The Gandy Belting Co., Baltimore, Md. A green stripe on side of belt. For canvas belting.

[NOTE.—Printed copies of specifications of United States patents may be obtained from THE INDIA RUBBER WORLD office at ten cents each postpaid.]

GREAT BRITAIN AND IRELAND.

PATENT SPECIFICATIONS PUBLISHED.

The number given is that assigned to the Patent at the time of the application, which in the case of these listed below was in 1909.

(Denotes Patents for American Devices.)

- [ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, MARCH 1, 1911.]
 25,165 (1909). Rubber cushion for typewriter keys. J. Johnson, Brighton.
 25,166 (1909). Gutta-Percha cement for leather. A. Vernon, Abertseyhan, Monmouthshire.
 25,208 (1909). Vehicle wheels. J. G. A. Kitchen, Scarthforth, Lancashire, and L. H. Storey, Loughrigg Brow, Ambleside, Westmorland.
 25,242 (1909). Billiard table cushion. J. S. Burroughes, London.
 25,536 (1909). Electric insulation. Scamens Bros & Co., London.
 25,547 (1909). Rubber tapping knives. G. S. Brown, Talawakelle, Ceylon.
 *25,588 (1909). Vehicle wheels. W. C. State, Akron, Ohio.
 25,652 (1909). Treads for tires. H. H. Allen, F. L. Partridge and F. H. Ward, Montreal, Canada.

[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, MARCH 8, 1911.]

- 25,907 (1909). Vehicle wheels. N. Hornstein, London.
 25,987 (1909). Vulcanizer. T. Carrara and A. Zeppigno, Turin, Italy.
 26,034 (1909). Hot water bottles. O. G. Moseley, G. H. Blick and D. Moseley & Sons, Ardwick, Manchester.
 26,094 (1909). Vehicle wheel tires. A. Whiteway and C. Macintosh & Co., Manchester.
 26,148 (1909). Elastic articles; especially wheel tires. H. Herzfelder, Berlin, Germany.
 26,303 (1909). Vehicle wheel tires. L. Brown and C. Macintosh & Co., Manchester.

[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, MARCH 15, 1911.]

- 26,474 (1909). Vehicle wheel tires. D. C. Thomas, Bronwydd, Glamorganshire, Wales.
 26,522 (1909). Vehicle wheels. P. Oakes, Burnley, Lanc.
 26,593 (1909). Vehicle wheel tires. T. Dunn, London.
 26,645 (1909). Vehicle wheel tires. R. T. Smith, Warrington, Lanc.
 26,671 (1909). Tire cleaning device. A. B. Davis, Southsea, Hants.
 26,699 (1909). Vehicle wheels. Soc. Michelin Et Cie, Clermont-Ferrand, Puy-de-dome, France.
 27,017 (1909). Vehicle wheel tires. J. L. Lemoine, Paris.

[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, MARCH 22, 1911.]

- 27,130 (1909). India rubber, etc. C. Dreyfus, A. Friedl, W. H. Bentley and Clayton Aniline Co., Manchester.
 27,147 (1909). Vehicle wheel tires. G. W. Beldam, London.
 27,162 (1909). Vehicle wheel tires. A. Whiteway and C. Macintosh & Co., Manchester.
 *27,255 (1909). Vehicle wheel tires. T. J. Clark, Milwaukee, Oregon.
 *27,352 (1909). Vehicle wheels. W. F. Jenkins and R. L. Jenkins, Richmond, Va.
 27,398 (1909). Artificial india rubber, etc. E. Black, London, and G. A. Morton, Liverpool.
 28,540 (1909). Portable vulcanizer. M. Bouchet, Paris.
 27,608 (1909). Vehicle wheel tires. R. Latour, Menin, Belgium.
 27,711 (1909). Skate wheels. S. Dawes, S. H. Dawes and R. A. G. Dawes, Shirley, Southampton.
 27,727 (1909). Vehicle wheel tires. H. Merrylees, Waterloo, Liverpool.
 27,744 (1909). Flexible tubes. F. Gratieux, Paris.

[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, MARCH 29, 1911.]

- *27,777 (1909). Rubber flange for inkwell. R. H. Brown, Sheephead Bay, L. I., and R. J. Brown, Tottenville, S. I., N. Y.
 27,834 (1909). Vehicle wheel tire. E. Hawley and A. H. Collier, London, England.
 27,964 (1909). Vehicle wheel tires. F. S. Novotny, Mareschowitz, Bohemia, Austria.
 28,084 (1909). Vehicle-wheel tires. A. E. Marchant, London.
 28,152 (1909). Vehicle wheels. F. L. Lane and R. G. Sharp, Leeds Forge, Leeds.
 28,228 (1909). Vehicle wheel tires. D. France, Collyhurst, Manchester.
 28,239 (1909). Vehicle wheel tires. H. Lemorchant and A. Tomlins, London.
 28,305 (1909). Rubber-tapping knives. H. S. Sculfer, Talawakelle, Ceylon.

THE FRENCH REPUBLIC.

PATENTS ISSUED (with Dates of Application).

- 419,966 (November 9, 1909). L. Marteaux. Improvements in wheels with elastic tires.
 420,040 (September 5, 1910). F. H. Hall. Reinforced inner tube for pneumatic tires.
 420,067 (September 6, 1910). I. Francois. System of flexible tires for automobiles and wheeled vehicles drawn by animals.
 420,090 (November 13, 1909). P. L. Legram. Armored rubber.
 420,071 (September 6, 1910). A. R. Van der Burg. Elastic tire for vehicle wheels.
 420,074 (September 8, 1910). L. J. Lesieur. Pneumatic tire for vehicle wheels.
 420,232 (August 18, 1910). A. Ben. Tires for wheels of all descriptions of vehicles.
 420,348 (September 3, 1910). N. A. Leonet. Vulcanizer for repairing air tubes and envelopes of pneumatic tires.
 420,317 (November 19, 1909). F. Jaume. Sectional air tube for uniform interior pressure.
 420,331 (November 20, 1909). H. Dagny and A. Huet. Process of making mixtures of caoutchouc and other plastic substances.
 420,414 (September 15, 1910). J. A. G. M. Durien. New pneumatic tire.
 420,455 (September 16, 1910). C. Schmidt. Non-skidding tire.
 420,529 (September 17, 1910). A. A. Perrier. Pneumatic tires for vehicle wheels.
 420,674 (September 19, 1910). F. Perody. Armored envelope for pneumatic tires.
 420,772 (December 2, 1909). H. Patand. Elastic tire for the wheels of vehicles.
 420,909 (September 20, 1910). B. B. Hill. Improvement in pneumatic tires.
 421,062 (October 4, 1910). A. B. Heimbach. Improvements in rubber heels for footwear.

Rubber Sundries Manufacturers' Association.

THE annual meeting of the Rubber Sundries Association was held this year on the thirteenth of April at the Waldorf-Astoria and closed with a banquet that was fully up to the best that the association has ever enjoyed, which is saying

much. At the business meeting preceding the banquet, the following officers were elected for the coming year: George B. Hodgman, president of the Hodgman Rubber Co., president; Fred. Hall Jones, president of the Tyer Rubber Co., vice-president; Edward E. Huber, of Eberhard Faber, secretary and treasurer.

The members of the association and their guests began to assemble about seven o'clock and a brief half-hour's sociable was indulged in, after which, the president leading the way, all present filed into the banquet room. The guest of honor was the Honorable William A. Prendergast, Comptroller of the City of New

York. Included among the other guests were Henry C. Pearson, the editor of THE INDIA RUBBER WORLD, Edward R. Rice, sales manager of the U. S. Rubber Co.; W. E. Barker, manager of the branch stores of that company and others.

The tables were set in the form of a hollow square, enclosing a sunken garden that was a mass of roses, rubber plants and other exotics.

The dinner, the menu of which follows, was one of the Waldorf's best and served with a deft promptness that was admirable.

During and between the courses a trio of banjoists delighted the diners with their rollicking vocal and instrumental selections which were exceptionally well rendered. In the post

prandial exercises President Hodgman proved himself an exceedingly graceful, sympathetic toastmaster. After paying a tribute to the memory of the late president of the association,



GEORGE B. HODGMAN, PRESIDENT.



HON. WILLIAM A. PRENDERGAST.



BANQUET OF THE RUBBER SUNDRIES MANUFACTURERS' ASSOCIATION.

Henry C. Burton, he introduced the Honorable William A. Prendergast. Mr. Prendergast had slipped away from another banquet and had arrived just in time to dine with the rubber men. Mr. Prendergast spoke for about half an hour, easily, forcefully, wittily. His remarks were chiefly confined to vital metropolitan problems, methods of municipal finance and the like, and he held the undivided attention of his hearers from start to finish. He also impressed his hearers as a man of extraordinary force and with an intimate knowledge of every detail of city affairs. His wonderful quickness in repartee was also a feature that all appreciated and enjoyed.

Homages de Capé-Cord
Gentle de volée, pimentée
Celeri Ananas, Olives
Fruit de l'Anglais, sauce aux crabes, Fruits
Fruits, Fruits, aux carottes
Fruits d'Anglais, sauce Celeri
Macédoine de légumes à la crème
Pommes de terre, palestine
Pommes de terre, au marasquin
Pintade du printemps, sauce au pain
Salade de romaine
Mousse de fraises, sauce Chantilly
Fruits
Pâtisseries Celeri

Mr. Prendergast was followed by the editor of THE INDIA RUBBER WORLD and by Mr. Howard E. Raymond in brief speeches.

Next was introduced Mr. A. Radcliffe Dugmore, a mighty hunter of big game, whose field of operations centered largely in the great English Protectorate of Uganda on the east coast of Africa. Mr. Dugmore for the last few years has given up the practice of securing lion's skins and buffalo heads for trophies

President Hodgman and Secretary-Treasurer Huber, the dinner committee, were warmly congratulated at the evening's close upon their success in arranging a banquet, every detail of which was so perfect.

OFFICIAL ANALYSIS OF RUBBER BY THE DUTCH GOVERNMENT.

TO insure uniformity in the valuation of crude rubber, in connection with its purchase and sale, the Bureau for the Rubber Trade and Industry, maintained under the management of Dr. G. van Iterson, Jr., by the Dutch government, with the permission of His Excellency the Minister of Agriculture, Industry and Trade, arranged to analyze all samples of rubber, gutta-percha and balata during the months of February, March and April of the current year, free of charge and give a certificate of the results of this analysis. The chemical analysis consisted of:

1. Determination of moisture.
2. " " resins.
3. " " inorganic impurities.
4. " " organic impurities.

In a circular letter, sent to all Dutch importers, brokers and manufacturers of rubber, specific instructions as to the character of the samples required and the manner of sending them were given and it was explained that the sample would be divided into three parts, of which one part would be used by the Bureau for the analysis, a second kept by the Bureau as a control sample and the third part returned to the sender, duly marked and accompanied by the certificate of analysis, to be shown with the certificate, when the rubber is offered for sale.

It is further stated in the circular, that taking into consideration the fact that the physical properties of rubber, i. e., its elasticity, etc., are of great importance in its valuation, the Bureau has arranged to install the necessary machines and apparatus for making this determination and will devote special attention to this branch of the subject. The circular is accompanied by a specimen of the form of certificate of analysis that will be given.

The above work is undertaken by the government experimentally, for the purpose of deciding whether such an analysis would be of sufficient value to the rubber trade to make its permanent prosecution advisable.

INDIA-RUBBER GOODS IN COMMERCE.

EXPORTS FROM THE UNITED STATES.

OFFICIAL statement of values of exports of manufactures of india-rubber and gutta-percha for the month of February, 1911, and for the first eight months of five fiscal years, beginning July 1:

MONTHS.	Belting, Packing, and Hose.	Boots and Shoes.	All Other Rubber.	TOTAL.
February, 1911.....	\$138,926	\$99,330	\$501,688	\$739,944
July-January	1,215,134	1,600,041	3,397,718	6,212,893
Total, 1910-11....	\$1,354,060	\$1,699,371	\$3,899,406	\$6,952,837
Total, 1909-10....	1,233,910	1,437,252	3,053,753	5,724,915
Total, 1908-09....	896,362	1,013,544	2,454,707	4,364,613
Total, 1907-08....	924,585	1,305,352	2,485,307	4,715,244
Total, 1906-07....	801,238	918,569	2,321,211	4,041,018

THE above heading "All Other Rubber," for the last eight months, includes the following details relating to Tires:

MONTHS.	For Automobiles.	All Other.	TOTAL.
February, 1911....	values \$179,047	\$49,007	\$228,054
July-January	1,015,673	319,022	1,334,695
Total, 1910-11.....	\$1,194,720	\$368,029	\$1,562,749



SOUVENIR OF THE RUBBER SUNDRIES BANQUET.

for the more modern and indeed the more dangerous sport of stalking big game and photographing it in its lairs. The lecturer showed a series of colored stereopticon views, which comprised daylight pictures of antelope, zebra, giraffe, African buffalo, rhinoceri and hippopotami, followed by a series of flashlight pictures of lions with an occasional hyena and jackal, these pictures being taken at all hours of the night when the beasts were feeding at some recent "kill." Naturally the photographer had many adventures and narrow escapes which he told with much spirit. Incidentally he mentioned having seen many plantations of Ceara rubber up in Uganda and that they were promising well.

A very pleasant feature of the Sundries dinners has been a souvenir presented to each guest while at the table. This year it was a most artistic box of hammered silver, the top and sides very richly ornamented with figures and scroll work in relief, the inside lined with gold. Its office is to adorn a smoking set and hold the matches. It is a question, however, if it is not more likely to be used as a jewel case.

Annual Meeting of the Rubber Club of America.

THE annual meeting of the Rubber Club of America was held on the evening of Monday, April 17, at the American House, Boston, Mass. Mr. George P. Whitmore, having been elected chairman, called the meeting to order at 7.10 p. m. A motion that the reading of the minutes of the preceding meet-

The report, having been unanimously accepted, was ordered placed on file.

Action was then taken on a proposed amendment to the constitution by which Section I of Article IV, relating to officers, which provided that "the officers of the club shall be a president,



FREDERIC C. HOOD, PRESIDENT.



FRANCIS H. APPLETON, VICE-PRESIDENT.

ing be dispensed with, having been carried, the secretary presented his annual report, which was read as follows:

SECRETARY'S REPORT.

Another year having passed, the Club enters on its twelfth year in fine condition, with the largest membership in its history, of 266, there having been thirty new members added during the year, while four have passed beyond.

There have been two entertainments during the year—the usual mid-summer outing, held at the Riverside Recreation Grounds on July 19, and the mid-winter dinner, held at Delmonico's, New York City, on January 11. Both were much enjoyed by members and friends. The Club is greatly indebted to the special New York committee for the great amount of time and work put in to make the New York dinner a success, which, with one exception, was the largest attended dinner we have ever had.

The Executive Committee and sub-committees have held several meetings during the year pertaining to Club matters.

Our membership in the Massachusetts State Board of Trade has been maintained.

The past year has taken from us four esteemed members: *Geo. P. Eustis, Chas. F. Baker, Henry C. Burton, Frank W. Feazie.*

Their absence at our meetings will be a great loss and their memories long cherished. Appropriate resolutions have been engrossed and sent to their families.

Good fellowship prevails among our members. There are no dissensions and the outlook for the success and prosperity of the Club is bright.

Respectfully submitted,

GEORGE H. MAYO, Secretary.

The report having been unanimously accepted and ordered on file, the report of the treasurer was presented and read as follows:

TREASURER'S REPORT OF CONDITIONS AS OF APRIL 1, 1911.

Receipts.

Bank Balance—April 1, 1910.....	\$121.19
Received for dues to April 1, 1911, from Members.....	1,239.99
Received for Initiations—New Members.....	115.00
Received from Members for Banquets, Outings, etc....	1,867.62
	<u>\$3,343.80</u>

Disbursements.

Expenses for Banquets, Outings, etc.....	\$3,125.10
Sundry Printings	18.85
Sundry Postage	13.84
Bank Collections	1.20
Death Resolution—C. F. Baker.....	3.00
Clerical Work	40.00
Annual Dues—Massachusetts State Board of Trade....	25.00
Expenses four Delegates—Deep Water Convention....	12.00
Bank Allowance—April 1, 1911.....	104.81
	<u>\$3,343.80</u>

(Signed) J. FRANK DUNBAR, Treasurer.

(Approved) F. E. STONE, Auditor.

a vice-president, seven honorary vice-presidents, a secretary, an assistant secretary and a treasurer, who with seven directors shall constitute the executive committee," be changed to read "nine directors" instead of "seven directors." A motion adopting the change was made and carried.

The election of officers for the ensuing year being the next business before the meeting, the report of the nominating committee was presented and read. The committee offered, in connection with the report, an explanation to the effect that having had in view the fact of the change in title of the club from "The New England Rubber Club" to "The Rubber Club of America," they had been guided in their selection of nominees in order to make the club truly representative, by an effort to include among them members representing all parts of the country and every branch of the rubber trade. On motion, there being no objection, the secretary cast one ballot for the following ticket, which was declared unanimously elected:

President: Frederic C. Hood, of Boston, Mass.
Vice-President: Francis H. Appleton, of Boston, Mass.
Treasurer: J. Frank Dunbar, of Boston, Mass.
Secretary: Frank D. Balderston, of Boston, Mass.
Asst. Secretary: Harold P. Fuller, of Boston, Mass.

For Honorary Vice-Presidents:

George H. Hood, of Boston, Mass.
Hon. Augustus O. Bourn, of Providence, R. I.
Hon. L. Dewart Apsley, of Hudson, Mass.
John H. Flint, of Andover, Mass.
Alexander M. Paul, of Boston, Mass.
Arthur W. Stedman, of New York City.
Henry C. Pearson, of New York City.

For Directors:

Elisha S. Williams, of New York City.
H. E. Raymond, of Akron, Ohio.
Homer E. Sawyer, of New York City.
George P. Whitmore, of Boston, Mass.
Frederick H. Jones, of Andover, Mass.
Elston E. Wadbrook, of New York City.
Robert L. Rice, of Boston, Mass.
George B. Hodgman, of New York City.
George H. Mayo, of Boston, Mass.

There being no further business, the meeting adjourned.

THE EDITOR'S BOOK TABLE.

THE CULTIVATION OF HEVEA. A MANUAL FOR THE PLANTER. By Dr. P. J. S. Cramer, director of agriculture, Surinam. Translated from the Dutch by Stuart R. Cope and A. G. van Amerongen. J. H. de Bussy, 1911. [8vo. 4p. 132. Cloth, 5s. 4s.]

THE author, a competent botanist, embodies in this work, the results of his visit, at the request of the Dutch government, to a number of rubber estates in the Malay peninsula and Ceylon, where he investigated the methods of cultivation and preparation of hevea rubber. The subject is treated in a very thorough manner, as may be gathered from the sub-titles—preparatory arrangements, maintenance of the plantations and tapping, which includes the treatment of the latex and the packing of the finished product—the entire work being written as a manual for the planter, rather than as a treatise for the general reader. The book contains forty illustrations, for the most part showing prevalent conditions in the country visited.

ARGENTINE TARIFF LAW. PUBLISHED BY THE PAN AMERICAN Union, Washington, D. C. Paper. 8vo. 33 pp. with index xx pp. Price 25 cents.

A CAREFULLY prepared pamphlet in which the original Spanish of all the schedules is given along with the English, to prevent misunderstanding. The index has been prepared, not merely from the law itself, but also from the appraisement schedules, annual statistical reports of imports and the customs ordinances so that it is more a subject digest than a simple index.

SOIL AND PLANT-SANITATION ON CACAO AND RUBBER Estates. By Harold Harold Smith, member of the West India Committee, etc., with an introduction by Professor Wyndham Dunstan, M.A., LL.D., etc., Director of the Imperial Institute. John Bale, Sons & Danielsson, Ltd., London. [Cloth. 8vo. Pp. 632. Price 10s. net.]

A WELL PRINTED, readable book, in which the author takes the position that diseases prevalent in plants should be treated on lines similar to those affecting human beings, taking the greatest care to keep them free from diseases and pests, or making every effort to eradicate them. Rubber is very fully discussed, special chapters being devoted to Castilloa, Ceará, Funtumia and wild rubbers generally, the questions of tapping rubber, rubber machinery and factories are fully discussed. Many other subjects that will interest officials, planters and investors are considered.

OTHER BOOKS RECEIVED.

SCIENCE AND INDUSTRY. [THE PRESIDENTIAL ADDRESS DELIVERED at the seventeenth general meeting of the American Electrochemical Society, Pittsburgh, May 5, 1910.] By Leo Hendrik Bakeland. [New York: 1910. Paper. 8vo. Pp. 37-53.]

PROCEEDINGS OF THE AMERICAN INSTITUTE OF ELECTRICAL Engineers for April, 1911, containing the usual accounts of meetings held and to be held, papers, discussions and reports. Published by the Society at New York. Paper. 8vo. 844 pp. Price \$1.00.

THE AGRICULTURAL LEDGER, 1910, NO. 1. FIRST HALF A-K. DEVOTED to a detailed description of the races of rice (*Oryza sativa*) in India. Published by the Superintendent of Government Printing, Calcutta, India. Paper. 8vo. 33 pp. Price 1s. 2d.

NEW TRADE PUBLICATIONS.

SYRACUSE RUBBER COMPANY (Syracuse, N. Y.), publish an illustrated catalogue of the weather-proof clothing they market under the trade marks "Goodyear's Bear Brand," "Tower's Oiled Clothing" and "Good Wear" horse covers, wagon covers and storm clothing of every description. The special features of each article are fully set forth, and the illustrations are of an originally artistic type; 24 pages, 6 x 9½ inches.

CHARLES E. MILLER (Anderson, Indiana), publishes a profusely illustrated catalogue of his vulcanizers and specialties for rubber goods manufacturers and repair men. Everything to which it refers is illustrated and fully described and prices quoted, making it a complete handbook of 28 pages (8½ x 5¾ inches) of the goods he manufactures.

BOSTON BELTING CO. (Boston, Mass.), in a neatly printed and illustrated booklet of 16 pages, 6 x 3½ inches, set forth the merits of their "Roxbro" braided hose, for air and water. It describes the gradual development of the perfected article, its

special merits and the uses for which it is designed, and quotes prices on the various makes and sizes.

THE H. O. CANFIELD COMPANY (Bridgeport, Conn.), in their Catalogue B (48 pages, 6 x 9 inches), describe and illustrate their line of plumbers' rubber supplies. The line is a complete one and clearly printed illustrations and a carefully compiled index make it a handy publication for dealers in these goods.

"A STORY IN FOUR CHAPTERS" is the title under which the Fisk Rubber Co., Chicopee Falls, Mass., publish a booklet descriptive of the advantages to be gained by carrying extra tires inflated, all ready to put on in case of puncture. In the case that forms the subject of the illustrations, ten minutes were consumed in making the change and a section of the Fisk Tire, with its removable rim, shows how this remarkable saving in time and trouble is effected. The photographs illustrating this neatly printed booklet, 7 x 5 inches, were made on the street, while the tire was being changed.

RUBBERIZED X-RAY PROOF ARMOR

Doctors and surgeons, making use of the X-ray apparatus for the examination of patients or the preparation of radiographs, are frequently exposed to painful and at times serious injury



from the highly concentrated electric light beams. A specially designed armor or costume, that is proof against these rays, is described in *La Presse Medicale*, Paris, by Dr. Paul Aubourg, and is illustrated herewith. It consists of a long tunic, made of fabric impregnated with lead, rubber and bismuth, which is worn over the ordinary operating robe, thick gauntlet gloves of the same material and rubber boots, and a helmet and mask of rubber that completely covers the head, the nose being protected by a broad nose piece, and the eyes by spectacles or goggles of a lead glaze, the whole presenting a startling appearance strongly reminiscent of the costume worn by the inquisitors in the old time torture

DOCTOR IN X-RAY PROOF COSTUME.

Courtesy of *The Sun*, New York.

chambers. A somewhat similar costume has been adopted by the physicians who are attending the victims of the plague in the Far East, with the exception that in this case the entire outfit is of rubber and the helmet impregnated with iodoform.

ERRATUM.

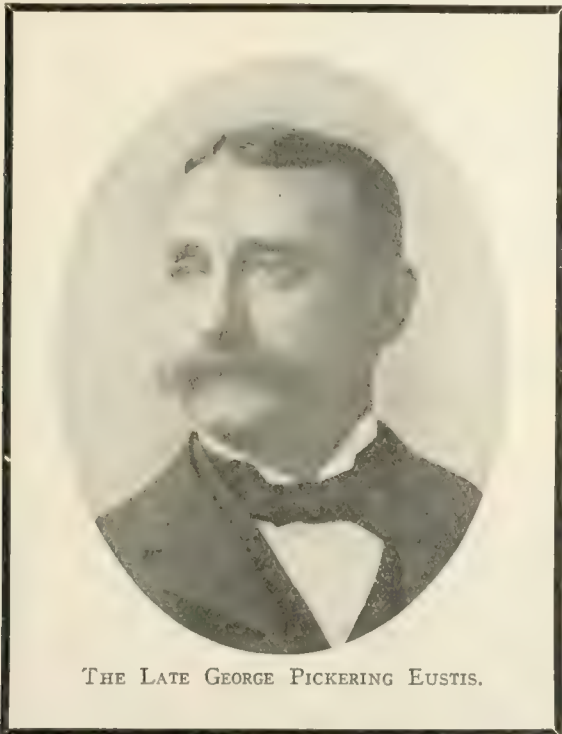
In an article entitled "New Process for Coagulating Castilloa," in the March 1 number of THE INDIA RUBBER WORLD, errors occurred in the conversion of German marks into United States currency. For 13 marks, the price obtained for the crude rubber, an equivalent of \$1.40 was quoted, this should have been \$3.094, while the price paid for the gum resin 7 marks, should have been given at \$1.666, in place of about 75¢ cents, as quoted.

The Obituary Record.

GEORGE PICKERING EUSTIS.

THE death of George P. Eustis, treasurer of the American Rubber Co., Boston, which occurred on the morning of April 4, removes another of the well-known figures that were instrumental in building up that very successful company. Mr. Eustis was born in Bangor, Maine, where he received the usual common school education, coming to Boston to seek his fortune when he was twenty years of age. He tried his hand at many things, incidentally becoming an expert accountant and in the '70's came with the American Rubber Co. under Robert B. Evans as bookkeeper, auditor and general financial man. Later he became both secretary and treasurer of the company, and made a record as a painstaking, capable and thoroughly reliable official.

In his quiet way, he made many friends and even when the burden of years and increasing ill health, began to press upon him,



THE LATE GEORGE PICKERING EUSTIS.

he never complained, but met all with the same modest cordiality and forgetfulness of self that was one of his chief charms.

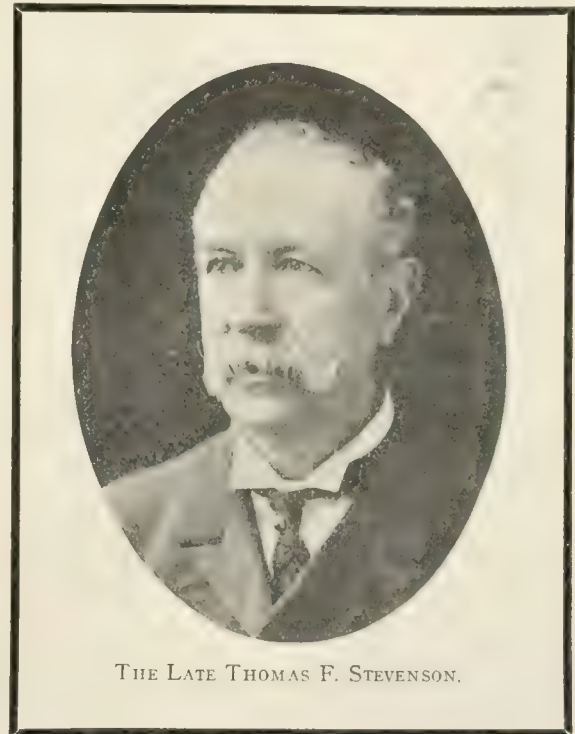
His wife, who was Miss Emma Rolfe of Boston, died several years ago, since when Mr. Eustis made his home at the Hotel Wadsworth until his death. He belonged to several fraternal organizations as well as to Massachusetts Lodge F. & A. M., St. Andrew's Chapter and Boston Commandery, K. T., and the Rubber Club of America. Mr. Eustis left no immediate family, his nearest relatives being a sister and four nephews in Bangor, Maine, and one nephew in Waterbury, Conn.

Interment services were in Mt. Auburn Chapel, the burial being in the family lot in that cemetery. Services were conducted by the Reverend Edward Cummings, pastor of the South Congregational Church, the music being under the direction of Albert W. Snow, of the Church of the Advent. Many relatives and friends were in attendance, including prominent business men from Boston; representatives of Masonic bodies; officials of the American Rubber Co., and members of the Rubber Club of America.

THOMAS F. STEVENSON.

The period of the early expansion of the rubber manufacturing business will be vividly recalled to many of the readers of THE INDIA RUBBER WORLD by the decease on the evening of April 20, at his residence in Brooklyn, N. Y., of Thomas F. Stevenson. Deceased, who had been ailing for about ten months, and whose death was due to a complication of ailments, had attained the ripe age of seventy-two years.

When some twenty years ago the rubber manufacturing business showed its first real expansion, one of the first effects of the development was the demand for the complete new and mechanical equipment of a large number of factories. In these changes Mr. Stevenson took a prominent part, as a dealer in machinery, a business in which he was actively engaged for a number of years, including a connection of upwards of thirty years with the Birmingham Iron Foundry. In arranging for



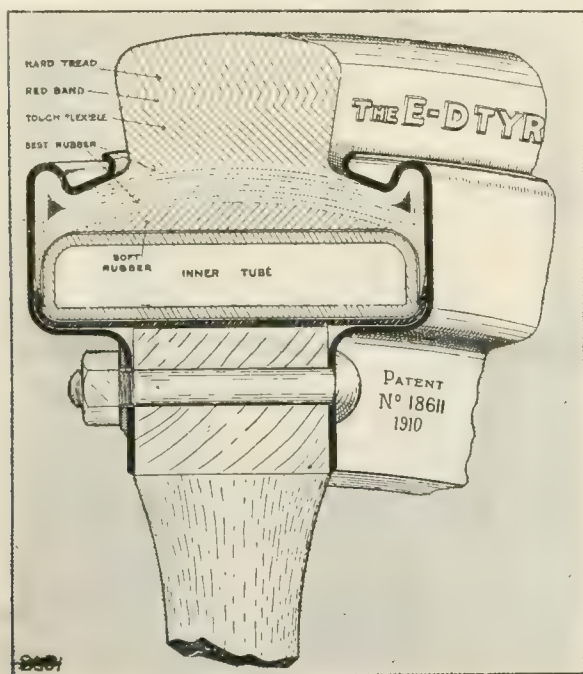
THE LATE THOMAS F. STEVENSON.

the installation of calenders, grinders, etc., of increased capacity, his knowledge of the requirements of the different manufacturers, his extensive acquaintance in rubber trade circles and the confidence reposed in him, enabled him to place the superseded machinery with smaller and less ambitious concerns, to the mutual advantage of both parties to the transaction.

A native of Brooklyn, having passed all his life in the city of his birth, with the exception of some ten years spent in Shanghai, China, and having lived for upwards of thirty-seven years in one locality, deceased enjoyed the widespread esteem and respect of his neighbors and fellow citizens. This was revealed in the number and beauty of the floral tributes with which the house was fairly filled, on the occasion of the funeral services, conducted by the Rev. T. C. McClelland, pastor of the Memorial Presbyterian Church, of which deceased was for many years a member. He was likewise a veteran Free Mason and one of the older members of that organization in Brooklyn. He leaves a son and daughter, his wife having died several years ago. The interment took place in Greenwood cemetery, on April 22.

A "SOLID PNEUMATIC" TIRE.

A TIRE that is said to possess all the advantages of the solid and pneumatic types, combined with greatly increased durability and efficiency, is at present undergoing exhaustive test in England, preparatory to being placed on the market. The following brief description will explain with the accompanying illustration, the construction of this new style of tire, which is known as the "E. D. (Evans-Doubleday) solid pneumatic" tire, and is especially recommended as adapted for light, high-speed, commercial vehicles, such as taxicabs, delivery wagons, etc. Attached to the wooden felloes of the wheel is a steel rim, somewhat wider than the wooden rim, which acts at once as a bed for the inner tube and as a band for the wooden felloes. Clamped to the two sides of the wooden felloes, by means of bolts, are side flanges, of pressed steel, one attached permanently, the other removable, to provide the demountable feature, indispensable in tires of this class.



THE E. D. "SOLID-PNEUMATIC" TIRE.

The tire proper, consists of an inner tube and a solid shoe, the former being of the type commonly used with the inflatable pneumatic tires and equipped with the usual valve; the solid portion is made up of a flexible band of canvas and rubber, which provides for the inward movement against the air tube and has a bead at each edge, to form at one side a lock with the rim, and on the other, in extended taper form, a protection for the inner tube that guards against the possibility of nipping. The tread portion consists of a narrow layer of red rubber, on which the tread proper, made of an elastic and very tough quality of rubber, is mounted. When the tire has been worn down to this red surface, it can be retreaded and its life thus indefinitely prolonged.

The heavy rubber tread is designed to act as a shock absorber, to take up the violent rebound inseparable from the ordinary pneumatic tire, when running on a rough road, so that with the cushioning property of the pneumatic the hard-wearing quality of the solid tire is effectively combined. It is claimed, that in the event of any injury to the inner tire, resulting in its deflation, it can be run as a solid tire without injury to tire or vehicle, until the necessary repair can be effected. As soon as the practicable value of the tire has been satisfactorily demonstrated, steps will be taken to place it on the market.

FOREIGN MARKETS FOR RUBBER TIRES.

SUPPLEMENTING the communications from United States consuls in foreign countries, on which the article under caption in the March number of THE INDIA RUBBER WORLD was based, the Department of Commerce and Labor makes public some further reports, bearing on the same subject, from which we abstract the following information:

The consular agent at Markneukirchen, Germany, states that the sale of automobiles in his district is steadily increasing and that tires are now kept in stock by several firms in the different cities. The main highway to the Bohemian spas, passes through Adorf, the last German town where tires are kept in stock. Dealers in this town and in Bad Elster, a nearby Saxon spa, have a considerable sale for tires among tourists visiting this section with their automobiles. Most of the tires sold are of two well-known French and German makes.

Bicycles are used quite extensively and there is a good demand for tires, the only foreign tire sold being of American make. To compete with the home and foreign tire manufacturers, the consul is of the opinion that the establishment of branch houses and sending out of travelling representatives would be necessary.

The United States consul at Barmen, Germany, reports an entirely undeveloped field for the introduction of rubber tires for wagons of all kinds. The city has 160,000 inhabitants and the only vehicles with rubber tires are the ambulances. He considers the opportunity for an enterprising concern handling goods of this description as excellent. He recommends the establishment by the manufacturer, of a branch agency.

The United States vice-consul, at Genoa, Italy, states that the tires of the three leading Italian manufacturers, enjoy the largest sale in that country, but several foreign makes are also sold, including some Americans. The fact that Italy imported in 1909, 402.9 tons of rubber tires, of a value of \$1,379,381, and for the first ten months of 1910, 792.9 tons, valued at \$3,519,683 and that this ratio of increase has been maintained for several years past, is a fair indication of the importance of the trade. Of the imports quoted for the first ten months of 1910, Germany furnished 300.5 tons, France, 220.9 tons; Great Britain, 202 tons and all other countries, 69.5 tons. Personal representatives, familiar with the language and business methods of the country, would be necessary to reach the Italian market, according to the consul's opinion, who considers the present an opportune time to introduce American automobile tires into Italy, and who does not see why American manufacturers should not obtain a share of the business.

The American vice-consul general at Shanghai, China, describes the market for rubber tires in his district, as limited, most of those used coming from Great Britain or France and only a negligible quantity from the United States. He refers particularly to the increasing number of jinrikishas—the light, man-hauled buggies of the far East—that are being equipped with rubber tires and to the active efforts some of the foreign manufacturers are making to increase their business in this direction. A man on the spot and conspicuous advertising, are pointed out as likely to prove valuable factors in securing the trade.

From Kobe, Japan, the United States consul reports a large and growing sale for rubber tires for bicycles and jinrikishas, the trade being mainly in the hands of the English houses. A local representative or an arrangement for representation by a local firm, are pointed out as likely to bring results.

The consul general of the United States at Guatemala City, Guatemala, Central America, reports a considerable number of carriages in that city equipped with rubber tires, mostly of American make. Of 40 automobiles in the city, about 30 are of American manufacture, there are a few motorcycles, no motor-trucks, and bicycles are popular and numerous.

Asbestos as a Commercial Product—II

THE mechanical treatment of asbestos was first undertaken by a Scottish company. In the following two years, other concerns took up the problem. The general procedure seems to have been pretty much the same. A crusher was employed to break up the raw material, which was then screened. The crushed rock, dropped from the screen on to a revolving table, where the barren rock was eliminated by hand picking. The remaining material was dried in a kiln, from which it went to the rolls, to be crushed fine. It was soon found that what was needed was an apparatus that would break up the rock without destroying the fiber. Two such machines have been found successful. One is called the Beater, and the other the Cyclone.

The Beater consists of a shell of a boiler, containing a shaft armed with knives or "teeth." When the shaft is in motion a churning of the material within is the result. The material may be fed into it continually, as it discharges the churned material automatically. The Cyclone apparatus is used the most, as it works with greater speed. This apparatus is a castiron receptacle, containing two shafts, one on either side, and shaped like propellers. These operate in opposite directions and the commotion caused is tremendous. The material ground up in this way is discharged through a suction pipe which deposits it on a vibrating screen.

rock which contains the chrysolite will often be interrupted here and there by pillars or walls of hard rock containing no asbestos. The smaller concerns seek to keep down expenses by leaving these in. The larger concerns, however, disregard this transient economy, knowing that it will be necessary to remove these pillars and walls sooner or later in order to deepen the excavation. The smaller mines are therefore irregular in plan, while the larger ones conform to a definite form. For example, the main pit of King Brothers' mine has a fairly regular outline. In 1904 it was about 700 feet in length and averaged about 200 feet in breadth. The bottom of the excavation was not kept at one level. A few years ago the maximum depth of the pits was about 165 feet. A single 40-horsepower cableway could, if operated continuously in the one line of service, handle about 25 or 30 tons per hour. But, because of their service ability for purposes other than removal of spoil from the pit, it is necessary or advisable to

have more cableways than the amount of spoil would indicate, and placed at strategic points. One concern was employing several years ago, eight cableways, although the material to be brought to the surface was only about 50 tons per hour.

All asbestos lands in Canada which belong to the Crown can be acquired either by purchase of concession or may be occu-



PREPARING TO BUILD ASBESTOS MILL, ASIATIC URALS.



BOO-KOO-SUN ASBESTOS PROPERTY, MONGOLIA.



RICH ASBESTOS PROPERTY, MIASS DISTRICT, ASIATIC URALS.

Much of the asbestos picks up bits of iron and steel during these processes, and this is eliminated by means of an electro magnet. This magnet is placed sometimes at the external end of the discharge pipe or sometimes over the vibrating screens.

In quarrying asbestos bearing rock, the methods of the larger and smaller concerns still differ somewhat. The serpentine

pied and worked under a mining license. Any person may prospect without a license, however.

The mines of Canada to-day produce the major portion of the asbestos used in the industrial world. But for six decades or more, it was known that Canada possessed this mineral, but the fact was not considered of commercial importance.

However, in 1877, a farmer named Fecteau discovered deposits of importance, and the first real mine began operations shortly afterwards. It is said that the enterprise was a paying one from the start. Seven mines in all were opened in the first few years. One of these is said to have paid \$24,000 net in one year upon an investment of \$6,000.

In 1880, the Canadian output was only 380 short tons. This had a value of \$24,700, or \$65 per ton. For a number of years, production and total value increased. In 1888, the output decreased slightly, but the value did not. With this exception, the eleven years following 1879 witnessed a constantly growing production. The value never failed to rise. In 1890, there were produced 9,860 tons, valued at \$1,260,240, or nearly \$128 per ton. Since then the output has been on the whole on the increase, but the value per ton never again reached the high-water mark of 1890. In 1904, Canada produced 35,068 tons, having a value of \$1,154,566, or \$32.92 per ton. Pretty much the whole of the total production is exported, the bulk coming to the United States. Thus, in the ten years 1895-1904, Canada exported to the United States a total of 151,848 tons, having a value of \$4,497,318, or an average ton value of \$29.62. Great Britain imported 26,048 tons in the same period, the value being \$1,337,025, or \$49.43 per ton; and Germany took 15,214 tons, having a value of \$600,402, or \$39.46 per ton. Ten concerns in

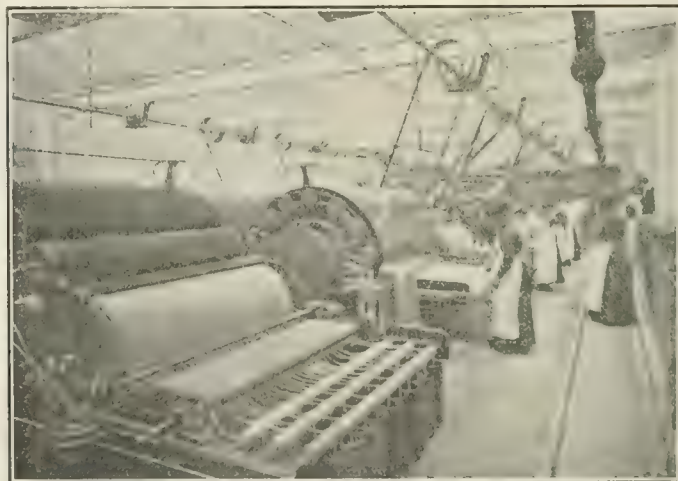
At the factories it is cleaned and separated into 3 grades: One, long fibers for weaving; two, short fibers for manufacturing asbestos papers, etc.; three, asbestos powder, part of which is used for cement and the rest is sold for land dressing.

This hornblende asbestos although of very good quality will never probably compete with the serpentine variety of Canada. In the first place the mining problem is a difficult one, calling for hand labor. Secondly, the fibers although long are of different strength and special, intricate machinery has to be used, and lastly, the supply is not as certain as is the Canadian.

Asbestos upon leaving the cobbing sheds is sent to the spinning mills, in bags holding about 100 pounds. Upon its arrival it is first fore-carded by a machine similar to the saw-tooth gin used in cotton mills. This separates the tangled fibers; after which a final carding takes place on a regular carding machine. When the asbestos leaves the carding machine it is combed smoothly and the fibers laid parallel, in a uniform mass. This mass is treated in a rota-spinning machine. This first spins it into a coarse yarn and then draws and spins this yarn until it becomes fine and quite strong. Where a hard strong thread is required for certain fabrics, the asbestos yarn is put into a doubling and twisting machine where two or more of the yarn threads are combined. Of course if the asbestos is to be impregnated with rubber a smooth hard finished thread is not



SPINNING DEPARTMENT, UNITED ASBESTOS CO., LONDON.



WEAVING DEPARTMENT, UNITED ASBESTOS CO., LONDON.

1903 were operating their mines and plants, employing about 1,500 men at an average yearly wage of about \$273.

Asbestos was first mined in Italy, and prior to 1880 it was the only country that produced it at a commercial profit. It was found in the Susa and Aosta regions and in the district of Valtellina. The best quality from Italy is found in the Susa region and is of the horn-blende or amphibole variety. It differs from chrysotile in that the latter is a hydrous silicate of magnesia, while the hornblende species is silicates of lime and magnesia with an earthy base, part of them only hydrous.

The Italian asbestos is very silky in appearance and grey to brown in color. Often the fibers are several feet in length. Its heat resisting power is about the same as that of chrysotile, but it has not the strength of the latter nor are its deposits as sure. In the Susa district it occurs on the sides of the mountains and, therefore, its mining is difficult. These mines vary from 3,000 to 7,000 feet above sea level. Usually shafts are driven, the blasting being accomplished by dynamite. The ore is taken out in the form of lumps of hard bundles of fibre. It is then loaded onto sleds or toboggans and coasted down the mountain side, and two men can bring down 8 cwt. of asbestos in 3 hours. When the day's work is finished the asbestos is bagged up as it is and sent to the factories.

desirable. In asbestos spinning roller cards are used almost entirely. Perfectly carded asbestos should be clean, uniform of web, no knots or matted places and no impurities. The weaving is done usually on power looms similar to those used in cotton mills. The crossing of the warp is done in different ways, depending upon whether the article to be produced be a simple fabric or a compound weave in which a varied number of filling threads is used.

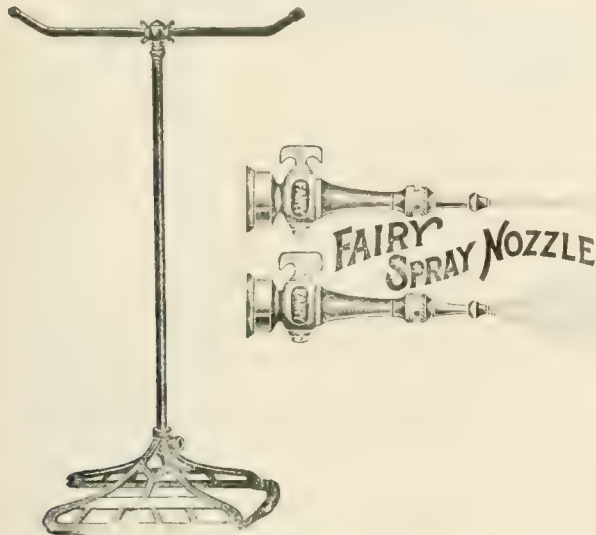
A simple fabric is that which is made up of a cotton warp and an asbestos filling thread, as are also fabrics that are made to be coated on both sides with rubber. The simple weave makes the "stiffest" and strongest fabric, owing to the equal number of its threads, and this is an essential feature in waterproof fabric, which must be of great flexibility and strength.

The spinning of asbestos for a long time seemed of great difficulty, owing to the manner in which the threads persisted in slipping past each other. Finally it was discovered that, under the microscope a thread of asbestos showed a notched and serrated surface and that by means of special twisting the spinning could be made successful. Now, after much experimenting manufacturers are able to spin a single asbestos thread of 100 yards in length, not weighing over an ounce and possessing considerable strength.

New Rubber Goods in the Market.

A NEW LAWN DEVICE.

A new five lawn-sprinkling device is the new "Putting Green" which stands 44 inches high and which rests on a large malleable iron sled. Heavy tubing is used in the arms and by means of the adjustable nuts at the top; these arms can be adjusted and held at any desired angle, which also permits variation in the form of the spray.



IMPROVED LAWN SPRINKLERS.

Another new and popular device is the "Fairy" spray nozzle, which is made in regular and extra heavy weight; the last named being in considerable demand in the New England trade. [W. D. Allen Manufacturing Co., Chicago, Illinois.]

RUBBER GRIPS FOR LEVER HANDLES.

ON a long run, especially on crowded thoroughfares and where the driver of an automobile is kept busy manipulating the levers, releasing and setting up clutches, putting on and taking off speeds, etc., the hard metal lever handles are apt to cause sore and fatigued hands, while a sudden "dab" for a lever, as often as not results in a painful bruise, to say nothing of rust-stained hands and gloves and roughened skin. A rubber grip, fitted to these handles, is an easy and permanent remedy for these disagreeables and provides a reasonably comfortable hand-hold, in place of the bare, cold metal. Even the tiresome operation of "pressing the button" on top of the clutch handle is made easy by the cushion formed by the bulb on top of the grip. The device



RUBBER LEVER GRIP.

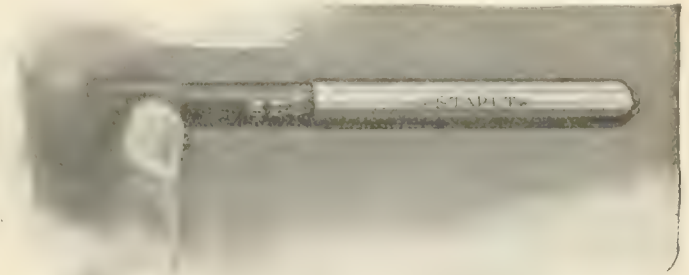
illustrated herewith is the only grip made for this purpose and has "caught on" wherever automobilists have seen it. [The Goodyear Tire and Rubber Co., Akron, Ohio.]

THE "STAPUT" TIRE GAUGE.

NOTHING contributes more to the longevity of automobile tires and the prevention of tire troubles, to say nothing of wear and tear on car and passengers' comfort, than a properly preserved pressure in the air chamber, something it is impossible to ensure without a reliable tire pressure gauge. Such a device is illustrated herewith—the Staput Tire Gauge.

With the ordinary tire gauge, the reading, to make use of a colloquialism, had to be caught "on the fly" and in whatever position

the valve to which the gauge was attached happened to be—upside down, in shadow, etc. This the gauge under consideration obviates. It does not drop back to zero as soon as the air pres-



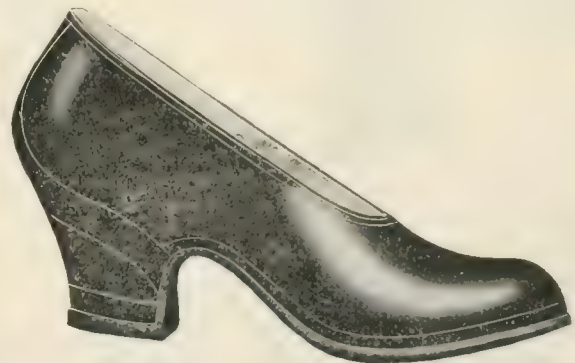
"STAPUT" TIRE GAUGE.

sure is released by its removal from the tire, but as its name indicates, remains in the position to which the air pressure has forced it, until it is purposely returned to place by hand. It consequently permits of just as accurate reading when removed, as when in place on the tire.

It is sent out, enclosed in a neat leather case, and can be obtained from dealers in accessories or from the manufacturers. [J. A. Bowden Co., Chicago, Illinois.]

A NEW STYLE RUBBER SHOE FOR WOMEN.

THE new "Stage" style rubber for women, introduced this year, is shown in the accompanying illustration. It is an ultra high

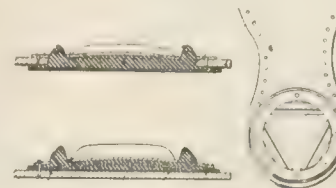


NEW "STAGE" STYLE WOMEN'S RUBBER.

heel style, with full broad toe and has been designed to fit the "Stage" last leather shoes, recently placed on the market. [Goodyear's Rubber Glove Co., Naugatuck, Connecticut.]

A RUBBER PLATE FOR BASE-BALL SHOES.

TO TAKE the place of the spiked shoe, worn by baseball players and other athletes, which is open to many objections, J. P. Kline, Brooklyn, Michigan, has designed the rubber plate illustrated herewith, on which U. S. Pat-



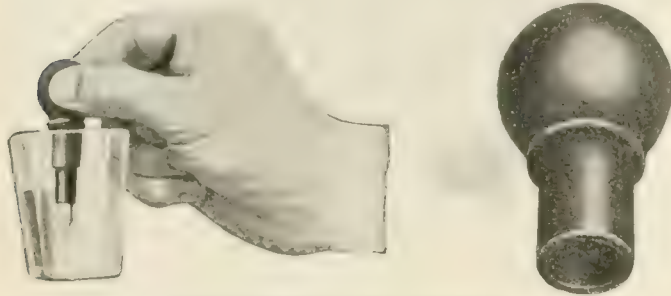
RUBBER SHOE PLATE.

ent, No. 982,278, has been issued to him. The dark-shaded portion, in the upper one of the accompanying illustrations, shows the rubber part, held in position by a sheet metal plate riveted through the sole. In the lower diagram, a method of attaching the rubber, without cutting through the sole, is shown. The manner of attaching the rubber heel plate is also shown. The rubber heel plate is also shown attached.

RUBBER AIDS TO THE FOUNTAIN PEN.

Having brought the fountain pen to a high degree of perfection, the makers of the Ideal Fountain Pen have placed on the market a number of "little things" that very materially add to the convenience and utility of the fountain pen in general and Waterman's Ideal Fountain Pen in particular. As these devices, if not made wholly of rubber, are dependent on rubber for their efficiency, we give them brief space in the columns of THE INDIA RUBBER WORLD.

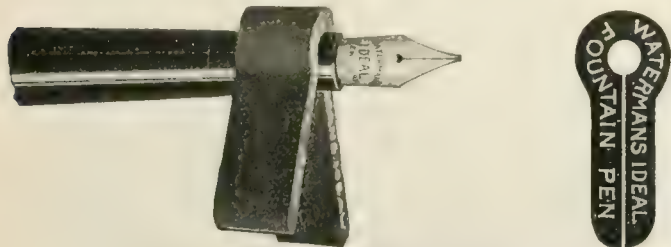
The Ideal Joint Opener will save many a broken section and obviate the use of pliers and other tools that were never in-



IDEAL FOUNTAIN PEN CLEANER

tended to be used on fountain pens. Without injuring the finest holder, it enables the tightest joint to be readily unscrewed. The illustration explains the manner of its use.

The Ideal Pen Cleaner is even more indispensable to the fountain pen owner. Slipped over the threaded end of any sized



IDEAL FOUNTAIN PEN JOINT OPENER

point-section, as shown, its alternate compression and release draws and discharges water through pen and feed thoroughly cleansing the passages.

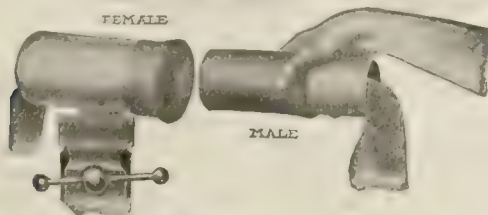
For filling a fountain pen the old style glass filler, still in use and illustrated herewith, has been replaced by progressive pen owners of the Ideal filler.

It holds enough ink to fill any ordinary pen and the long tube enables the pen to be filled from the bottom up, the formation of air bubbles being thus prevented, a solid pen full of ink is secured by withdrawing the filler as the ink is squeezed into the pen.

[L. E. Waterman Co., New York.]

A QUICK REPAIR FOR INNER TUBES.

A SMOOTH and permanent splice, it is claimed, can be made in an inner tube, with the aid of the device illustrated herewith, or,

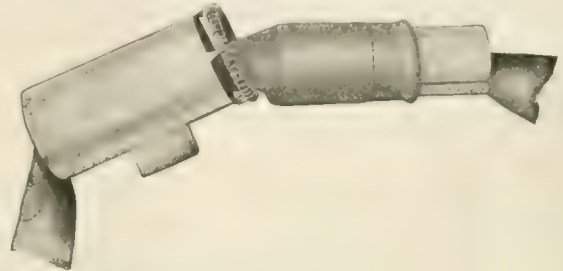


SPLICER FOR INNER TUBE, FIG. 1.

when it is impossible to make such a repair, a new piece can be spliced in with its aid and the tube made practically as good as

new. In performing the operation one end of the tube is inserted in the male splicer and turned back $2\frac{1}{2}$ inches, as shown in Fig. 1.

The other end of the tube is then inserted in the female splicer, turned back as shown and the parts washed with benzole or gasoline to remove all foreign substance allowing time for its evaporation. A coat of cement is then applied to the parts and allowed to dry for ten minutes, the female splicer is placed in a vise and the male registered in the female as in Fig. 1.



SPLICER FOR INNER TUBES, FIG. 2.

Acid solution is poured into a small porcelain vessel and with a clean brush is applied to the tube on the male splicer by passing the hand from the bottom over the top and down the other sides, moistening the entire surface; the male splicer is then pushed into the female.

The brass rollers on the male splicer automatically effect the splice, which completes the operation as in Fig. 2. [M. & M. Manufacturing Co., Akron, Ohio.]

A USEFUL POCKET SCREW DRIVER.

EQUIPPED with four blades of different widths, contained in a telescope handle and so retained, by a spring device that while they can readily be removed for use, they will not rattle or fall out if the cap is removed, each blade can be instantly and firmly screwed in the handle for use. The blades are $\frac{3}{32}$, $\frac{5}{32}$, $\frac{1}{4}$ and $\frac{1}{2}$ inches wide, and the smaller sizes can be used to replace a boring tool to make holes in wood to facilitate driving the screws. The handle of the tool is covered with hard rubber for insulation, so that if used anywhere about electrical apparatus, there is no possibility of the transmission of shock. Being nicely ribbed, a firm grip on the handle is assured. Extra blades, of any desired size, can be obtained at small cost. For working among electric wires, adjusting electrical apparatus, etc., this is an ideal tool for the pocket or the kit. [The L. S. Starrett Co., Athol, Massachusetts.]



THE CABINET PORTABLE OVEN.

A PORTABLE oven, made of galvanized sheet steel are designed to generate, with small consumption of fuel, a high degree of heat, without radiating it into the surrounding air, is illustrated herewith. The walls are all made double, the outer walls being lined with a special make of air-cell asbestos, which, with the intervening air space, makes an excellent non-conductor of heat.

The oven can be arranged for heating with either artificial or natural gas, coke, coal or wood. To ensure the even circulation of heat, the fire box is separated from the baking chamber immediately above it, by a double plate, having an air space between it and the baking space above; the back of the baking chamber is divided from the hot-air chamber in the back, which is a continuation of

the hot-air chamber at the bottom, by means of a single plate, in which there are slats to provide for uniform distribution of the heat.

Each shelf or baking compartment is provided with an independent door, which, when opened, drops down to a horizontal position, forming a shelf that facilitates the introduction or removal of articles, and minimizes the loss of heat.

The cabinet oven, which is made in several styles and sizes, is adapted for vulcanizing rubber goods or baking cores, enameling, etc. [The G. S. Blodgett Co., Burlington, Vermont.]

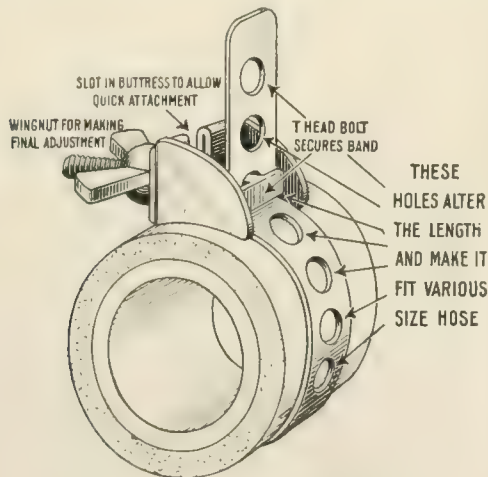
A NEW ANTI-SKID TIRE.

THE extent to which the serious results that may follow the skidding of the wheels of an automobile is realized, is reflected in the endless variety of devices, mostly tires of the no-skid variety, that have been brought out from time to time. A recent addition to their number is the Stein Double Cushion Tire, of which an illustration is presented herewith. In its construction, it consists of three bars, running lengthwise of the tire, the center bar being wider than the sides, and crossbars running at right angles with the longitudinal bars every half inch. It is claimed that this ensures equal distribution of the strain, on account of equal distribution of air pressure; that the bars are placed at the best angles to secure a maximum surface traction that the bars placed in this position support each other and that the surface thus formed does not pick up mud and become slippery in consequence. [Stein Double Cushion Tire Company, Akron, Ohio.]



AN IMPROVED HOSE COUPLING.

The hose coupling or clamp of improved construction, illustrated herewith, can be adjusted instantly to fit various sizes of hose and applied without the use of tools. Neatly made, from stamped brass, with fine threaded steel screw, fitted with brass



IMPROVED HOSE COUPLING OR CLAMP.

wing-nut, it will not rust fast, but can be instantly released or closed and set up tight without buckling the hose, which is completely encircled by the flat brass band. This feature of fitting any intermediate size of hose within its capacity, is an advantage on which the manufacturer lays particular emphasis. [B. Morgan, Newport, Rhode Island.]

ACCORDING to official statistics the imports of crude rubber during the month of March, 1911, amounted in value to 7.7 million dollars, compared with 8.4 million dollars for the same month in 1910.

CEMENTLESS PATCH FOR PUNCTURED TIRES.

For a quick repair to damaged tires or punctured inner tubes, one that entails no waiting for cement to dry and obviates the possibility of the tube being stuck to the inside of the shoe, may be affected with the aid of the Diamond Quick-Acting Cementless Patch, made by the Diamond Rubber Co., Akron, Ohio, and obtainable from any of their distributing depots or from up-to-date dealers in auto supplies.



CEMENTLESS TIRE PATCH.

All that is necessary in applying it is to clean the puncture thoroughly, apply the patch, replace the tire and proceed. The heat the tire generates in running completes the process. Put up in air-tight tins with emery cloth and full directions, the patch sells at one dollar a tin, containing one dozen, and is not only a cleanly and salable addition to the stock of every dealer in auto supplies but should be included in the repair kit carried on every automobile.

NEW STYLES IN RUBBER FOOTWEAR.

New styles in rubber footwear, to meet the prevailing modes in men's and women's leather shoes, are illustrated herewith. The first is a woman's "nobby" toe rubber shoe, a new model for this season. It is intended for women's high-heel shoes,



NEW STYLES IN RUBBER FOOTWEAR.

having the "nobby" toe that threatens to become popular this year. The ball of the shoe has a medium swing and the toe is somewhat narrower. It is made in S, M, F, FF or W widths. The latest model in men's military heel, nobby toe rubber shoe is also shown. It is especially made to fit extreme high-heel leather shoes, and has a narrow toe, with a wide ball and small heel seat. This shoe is made in M, F, FF or W widths. [Apsley Rubber Co., Boston, Mass.]

Mexican Rubber Plantation Notes.

By a Special Correspondent.

INTEREST in the possibilities of the cultivation in Mexico of Para rubber (*Hevea brasiliensis*) continues to be manifested on various sides; and, in addition to the companies previously referred to in these columns as about to undertake experimental plantings of the tree, may be mentioned the Obispo Rubber Plantation Company, of Hacienda San Silverio, near Tuxtepec, State of Oaxaca, the Pennsylvania Obispo Plantation Company, of Plantación La Estancia, and the Playa Vicente Rubber Company, of Hacienda La Escondida, both of these latter being situated in the neighborhood of Playa Vicente, on the Tesechoacán River, State of Veracruz. In this connection it may be noted that the Secretaría de Fomento of the Mexican Government has lately published, for general distribution, a bulletin prepared by the Agricultural Experiment Station at San Juan Bautista, State of Tabasco, on the subject of the culture of the Pará rubber tree, with a view to its encouragement in those parts of the country where the physical conditions would appear to be suitable.

Of the estates above named two are also extending their Castilloa plantings—San Silverio putting out this year 400 acres and La Estancia 250 acres. The former had several thousand acres of rubber under cultivation in 1909, much of which was approaching a tappable age, when, during an abnormal drought in that year, aggravated by a violent south wind, it was almost entirely destroyed by fire, which originated in some adjacent scrub oak land. Notwithstanding every possible effort on the part of the plantation force to arrest the conflagration, within the short space of two hours it had swept over the place, leaving only a few blocks, totalling some 150 acres, untouched. Prompt action in cutting back the charred stumps has probably been the salvation of the plantings, which at first seemed to be hopelessly doomed—90 per cent. of the trees thus treated having since sent up new trunks with strong foliar development. The recovery has been most remarkable, many portions of the burned area now presenting the aspect of healthy new plantings. The younger trees exhibit the better revival, this apparent anomaly being explained by the fact that the lateral root systems of the older and larger trees, being so much nearer the surface of the ground, were the more exposed to the flames, and thus caused the trees to suffer to a correspondingly greater degree. The outlook may now be said to be distinctly encouraging, and there seems every reasonable prospect of the complete restoration of the property to *statu quo* within a period considerably less than could before have been anticipated. The property was transferred on the 1st of May, 1910, to the Obispo Rubber Plantation Company by the Republic Development Company, under a special arrangement contingent upon the loss sustained by the fire.

On La Estancia estate, which is being planted by the Central Development & Contracting Company, of Scottdale, Pennsylvania, the present total area in rubber is 1,050 acres, varying in age between one year and four years. A good stand resulted from last season's planting, which amounted to 205 acres. The soil on this estate is of a somewhat uncommon character. Near the Tesechoacán river, which constitutes one of the boundaries, it contains a large proportion of fine gravel and sand, the former element diminishing as the distance from the river increases until almost entirely replaced by a fine, dark colored sandy loam. Such a gravelly soil may, however, be quite suitable to the growth of Castilloa, for the writer knows of at least one locality in Mexico where a number of big rubber trees—probably twenty years or more old—are thriving in a soil which, to a tested depth of four or five feet, is composed of almost pure gravel. The sub-soil at La Estancia varies slightly in different

parts of the estate, but is mainly a sandy clay, which, however, possesses no great density nor any appreciable stickiness, readily crumbling in the hand. The rapid absorption of water in heavy rains testifies to the porous character of this formation, which, in conjunction with the favorable topography of the land, assists in checking surface erosion, losses of organic matter and humus.

Within a short distance of La Estancia, on the road to Playa Vicente, is Hacienda La Escondida, on which there are, in all, about a million rubber trees, while a large area is in pasture for the maintenance of some 1,400 head of cattle. The best of the trees, between five and six years old, were tapped for the first time this year. This tapping was contemplated merely as an experiment, but the initial results proved so satisfactory that it was thought well to continue until the output assumed commercial proportions, a total quantity of about 6,000 lbs. of dry rubber (three parts in slab and five parts in *greña* or scrap) having been obtained up to February. This rubber was prepared by the usual method—coagulating with the juice of the "Jamole" vine (*Ipomoea bona nox*), the simplest of appliances only having been used, as the original intention would not have warranted any great expense in equipment.

Much interest was aroused among rubber planters in Mexico by the recent visit of Mr. Harry S. Smith, of Tobago, for the purpose of investigating the status of Castilloa cultivation in this country in comparison with the same in the British West Indies. Mr. Smith came with a letter of introduction from the Government of Trinidad (of which the island of Tobago is a dependency), and inspected a number of representative plantations in the states of Veracruz, Oaxaca and Chiapas. His itinerary included Guatemala, British Honduras and the west coast of Central America, crossing the Isthmus of Panama on his way home. One of the most interesting matters which he discussed with planters was that of the respective methods in vogue in this country and in Trinidad with regard to the tapping of Castilloa rubber trees. The system adopted in the British West Indies may be briefly explained as follows: The cuts are made with a chisel and mallet, the former tool being 1½ inches wide, with a very thin cutting edge, obtained by means of an extra long bevel. The chisel is held in a slightly upward direction, with the object of making a cut which will tend to throw rain water over the lower edge and aid the wound healing process. The cuts are made about 12 inches apart in a series of vertical lines, spaced about three or four inches from each other, from the base of the tree to a height of about six feet around its whole girth, the successive series of cuts being "staggered." The latex is collected on a calico apron, tied round the bottom of the tree, and so arranged as to form a sort of basin into which the latex may flow. From this receptacle the latex is ladled into enameled-iron cups, and vessels of such material only are used for its storage. It must be confessed that local planters did not wax very enthusiastic over this system—especially when they learned that it demanded the labor of four men to a tree. Admitting the possible superiority of the chisel *incisions* over the ordinary knife *excisions*, on the score of reduced cortical mutilation of the trees, the former clearly involves a more difficult problem in the collection of the latex; and the apron device, above described, by reason of its clumsiness and evident liability to entail loss of latex unless very carefully adjusted to the inequalities of the tree trunk (which, in turn, would mean loss of time), could scarcely be accepted as a satisfactory solution of the same. Not that planters here believe for a moment that they have reached finality in Castilloa tapping; but, Missourians all in this respect, they want to be "shown."

Another matter of perhaps still greater interest brought to the attention of rubber planters in Mexico by Mr. Smith was that of his invention of a centrifugal machine for the treatment of *Castilloa* latex—designed not only to separate but also to dry the latex at the same time. Various plantations are now anxiously awaiting the advent of this machine upon the market, anticipating by its means a complete revolution in present methods, judging by the samples shown by Mr. Smith.

A careful record kept at La Zacualpa of the yield during the past year of 1,230 planted rubber trees, twenty years old (presumably *Castilloa lactiflua*, to which, according to Mr. Henry Pittier's recently published monograph on the genus "Castilla" (sic), specific rank has now been given), shows that they average 2¼ lb. per tree of dry rubber—and this despite the severe maltreatment which they formerly suffered by *machete* tapping.

A new estate, called Los Tocayos, situated near the several La Zacualpa properties, was opened up last year by the Soconusco Development Company, of San Francisco, California, and the planting made is reported to have been very successful. This season's work on the same estate is to embrace 300 acres. Some 1,600 acres are to be planted on El Rosario estate, near Mapastepec, by the St. Paul Tropical Development Company, of St. Paul, Minnesota, while another concern, located in the district, proposes to put out 650 acres this year on Santa Clara estate.

Advice comes from London on the hearing of a petition in the High Court of Justice for the winding up of the Amistad Rubber Plantations & Estates, Limited, which event may be regarded as the sequel to the difficulty mentioned in connection with this promotion in THE INDIA RUBBER WORLD for January, 1911, page 123

CASTILLOA IN MEXICO.

IN a report to the board of Agriculture, Trinidad, W. I., Harry S. Smith describes his observations on a visit to Mexico and Central America, made at the instance of that body to investigate the conditions of the *Castilloa* rubber industry in those countries.

From Vera Cruz he proceeded by rail and steam launch to Tuxtepec, which he describes as a "rubber village," with *Castilloa* trees growing in every yard, some very old and of great size. Native rubber gatherers pay for the privilege of tapping them. He noted that the trees were of the same variety as those planted in Tobago and records his conviction that the tree cultivated in Mexico is identical with the one grown there.

He visited, in turn, the San Cristobal de Vega, the San Saviaro, the El Palmar, Tezonapa, La Buena Ventura, where he tapped a few 8-year-old trees to obtain a sample for comparison with Tobago rubber; Rubio, with upwards of 2,000,000 trees, the planting of which was started in 1902, on a clearing of over 1,500 acres and several plantations in Chiapas, containing many millions of trees, which, owing to the well-distributed rainfall and suitable soil are described as doing well. He referred also to the thousands of acres of rubber which have been planted on the Isthmus of Tehuantepec under unsuitable conditions and subsequently abandoned.

Visits to the El Rosario estate, a young property, which, at the end of 1911 will have 5,000 acres under rubber, all planted in three years and the planting system of which he fully describes; the Doña Maria, estate at Soconusco, where tapping, which he describes in detail, was in full swing. The coagulation of the latex, accomplished with the aid of the juice of the moon vine, the drying, etc., he also explains.

The last estate he visited was the La Zacualpa group of properties, four in number, with 20,000 acres under cultivation and 6,000,000 trees, the largest block of *Castilloa* in the world. The output of this property, for 1910, exceeded 100,000 pounds and is expected, within three years, to reach 500,000 pounds.

On this estate, the manager, Mr. Fisher, has decided that trees as young as six years old can be tapped to advantage and without injury, provided they have a girth of 15 inches. Such trees are tapped only to a height of six feet, with four or five V cuts each year; as the trees expand, the cuts are carried higher up the trunk, so that at ten years there may be about 20 to 25 cuts, reaching 30 feet up the trees. On this estate, the manager has introduced a system of controlling the collections, which has nearly doubled the amount brought in by the same number of tappers. The method, which may be of interest to some of our readers is described in the report as follows: Each man has a number in the "Mill Book"; his collecting bucket and coagulating tanks have a similar number. At present there are 240 wooden tanks, in groups of six; each man's number corresponds to three of these, so that the latex brought in on Monday goes into one, Tuesday's into a second, and Wednesday's into a third. Monday's latex being coagulated on Wednesday, leaves the first tank ready for Thursday's rubber, each tank is fitted with a tap to draw off the water from the bottom and a glass-covered slit to show when enough water has been drawn off, and each group of six has a jet above for filling the tanks with fresh water. When the rubber is coagulated on the third day, it is lifted out of the tank, and a number tag stuck into it; it is taken to the *crêpeing* machine, the rubber passes through the rolls, and with its tag goes on to the weighing machine where the amount is noted against the man's number in the "Mill Book."

Under this system, tapping in a 7 to 8-year field, with wild rubber scattered through, 77 men tapped 4,015 trees on one of the days that Mr. Smith was at La Zacualpa, bringing in enough latex to make 528 pounds of dry rubber = 52 trees per man, with an average amount of 6.9 pounds per man. The greatest amount brought in by one man was 9¼ pounds. A man who takes a small boy with him brought in 12 pounds. Tapping 12 days during two weeks, these two brought enough latex to make 189 pounds of dry rubber. On the day that he took his notes 506 pounds passed through the *crêpeing* rolls, 18 pounds through the centrifugal, and 4 pounds of scrap from the tins, buckets, tanks, etc., making in all 528 pounds, from 4,015 trees = 2.2 ounces per tree. The men have to bring in 5 pounds per day and are paid 3d. for every extra pound. If after a short trial they cannot do this they are put to other employment.

The methods of centrifugalization, of drying, pressing and packing practised on this estate, are also described.

In Guatemala, both wild and cultivated *Castilloa* were observed in traveling from San José to Guatemala City, but it was noted that on reaching an altitude of 1,200 feet, the natural rubber zone was passed.

In Panama, the *Castilloa* trees under cultivation were noted to be different to the variety grown in Mexico, Trinidad and Tobago. The latex does not flow freely in tapping, but oozes out and thickens, necessitating scraping it off, or leaving it to coagulate as scrap. It was learned from a native tapper that the wild trees give a more fluid latex, but that even these do not flow freely.

The report states that when Mr. Smith reached Panama, the *Castilloa* were in blossom, but that of about 30 trees examined by him only two were found to bear female flowers, a condition that excited his surprise, as in Tobago both male and female flowers appear on the same tree and he had never before seen a *Castilloa* bearing only male blossoms.

The *Castilloa* trees seen in Mexico are described as notably free from diseases, not a single case of collar rot, which attacks them in the West Indies, having been observed, while "die back," where not due to the effects of poverty of soil or strong drying winds, proves amenable to treatment.

The yield he describes as about the same in Mexico as in the West Indies.

As a result of his visit to Mexico, Mr. Smith considers the following conclusions as warranted:

(a) That Tobago has the same variety of *Castilloa* as that cultivated in Mexico, where it has been proved that its culture can be made a commercial success.

(b) That the general conditions, climatic and economic, are equally favorable in the colony.

(c) That from actual experiments, and from information given by planters in Mexico, there is nothing to justify the statements made that ten to twelve year old *Castilloa* trees yield an average of about 2 pounds per year, but everything shows that the average at this age is near one-half pound per tree.

(d) That by tapping higher up the tree as is done in Mexico the yield can be considerably increased and that by adopting some modification of the Mexican methods of tapping and collecting, the cost of production in Tobago can be reduced materially.

(e) That the percentage of resin in rubber from trees of similar age is probably the same in both places, but the resin-contents of the average rubber shipped from Mexico would be lower, on account of the number of large wild *Castilloas* scattered through the plantations, which are tapped at the same time as the young cultivated trees and the latex mixed.

THE PRICE OF PLANTATION "CASTILLOA."

TO THE EDITOR OF THE INDIA RUBBER WORLD: I am well aware that the *Castilloa* rubber is not the equal of fine Pará, but I am of the opinion that we can prepare our plantation rubber in such a way as to insure us a better price than we are now getting in the open market. I should like to be informed for what particular uses the *Castilloa* is best suited, so that I can get in touch with the manufacturers and try to prepare my rubber to suit their particular purpose.

I have 2,000 acres of rubber in first class condition; the latest plantings were made in 1907. Our estimated output for 1911 is 30,000 pounds, and, naturally, our output within the next few years, will be large. I have forwarded various small shipments of fine creamed rubber—very dry, and "blocked"—and have received for the same ordinary scrap rubber prices. No doubt this comes about, to some extent, through ordinary commission procedure, but the fact remains that I see no reason to prepare a first class article as regards dryness and cleanliness, and then accept the price of an ordinary article.

What I very much want to try out is to prepare my rubber as perfectly as possible and ship it to a manufacturer who wants that class of rubber—that is, one who manufactures articles for which *Castilloa* is suitable. If, upon a thorough try-out, we can get no better price than ordinary scrap brings, then we can save time and money by preparing scrap with its corresponding content of dirt and water.

Humanguillo, Tabasco, Mex.

A. G. WEISS.

[THERE can be no doubt that *Castilloa* rubber, if clean and dry and not sticky, will always find a ready market, and ultimately, when the carefully prepared product becomes better known, at a price commensurate with its merits. It is scarcely worth while to try to prepare it for any particular line of manufacture, as it goes into an infinite variety of goods. The same applies to the product of other rubber species.—THE EDITOR.]

RUBBER GROWING IN HAWAII.

THE ANNUAL meeting of the Hawaiian Rubber Growers' Association took place recently in the rooms of the Chamber of Commerce, in Honolulu, Hawaii. Delegates were in attendance from all of the rubber plantations in Hawaii, and addresses were given as follows:

"Methods of Tapping," by W. A. Anderson, manager of Nahiku Rubber Company.

"Cultivation and Its Results," by L. F. Turner, manager of Pacific Development Company.

"Pests and Diseases of Rubber Trees in Hawaii," by C. L. Austin, manager of Hawaiian-American Rubber Company.

"Five Years of Rubber Culture in Hawaii," by William Williamson.

Dr. E. V. Wilcox, superintendent of the United States Agricultural Experiment Station in Honolulu, who has made a careful study of the work of the rubber growers in Hawaii, gave a very interesting address on the status of the industry. After commenting on the enterprise displayed by those interested in rubber culture in Hawaii, considering the slight knowledge they possessed of the work, he proceeded, in part, as follows:

"The manner of cultivation of rubber trees is one of the most important things in the industry. I went over all the plantings of all the Nahiku companies last May, and over Puna Plantation, too, and was able to observe very carefully the growth of trees with cultivation and without it. It is a very serious proposition on account of the very rough nature of the land. It simply means promptly getting rid of the weeds and giving the sun a chance to get at the soil. In my opinion, it is not necessary in rubber cultivation to stir the soil very much after the trees have once gotten a start, if you keep the ground clear so that the sun can get at it.

"One of the most striking things to me on looking over all the plantings and comparing them with about a year before, was the great changes that had taken place in the physical appearance of the soil. In some places the soil was mud and the horse went along in the mire. After the weeds were removed the superficial water ran off, and many of those places were actually more or less dry. There was a very noticeable difference, the air was going into the roots and the trees were growing. Now, from the results that have been had so far in growing rubber in Nahiku, it seems to me that we may be sure that a tree large enough for tapping can be got inside of five years. I do not think that unreasonable. Inside of three years we could get them, with the best cultivation, but five years is plenty of time to allow to get a plantation of good size for convenient tapping.

"I think that a reasonable profit can be obtained from the rubber trees as they stand."

Addresses were also given by Prof. Ralph S. Hosmer, Superintendent of Forestry in Hawaii, and E. M. Ehrhorn, entomologist of the Agricultural Department.

The following officers were elected for the ensuing year: C. D. Lufkin, president; William Williamson, vice-president; D. C. Lindsay, secretary and treasurer; B. von Damm and Wade Warren Thayer, directors.

The Hawaiian Rubber Growers' Association is an organization composed of stockholders and directors of the different rubber plantations in Hawaii, whose object is to advance the interests of the rubber industry in the Hawaiian Islands. About 2,500 acres of land is planted in rubber in the Hawaiian Islands at the present time. The oldest plantings were made about six years ago, and the trees of these early plantings are now being tapped, and rubber, in small quantities but of an excellent quality, is being shipped to the Eastern markets. In another year the output will be reckoned in considerable figures, and as all the plantations are adopting the most modern methods of preparing the latex for the market, a very high quality of rubber will be offered from the Hawaiian plantations.

E. Delafond, engineer, is interested in a new factory for the preparation of guayule rubber, established under the title, "La Victoria," F. F. Moncada & Co., at Sierra Hermosa, State of San Luis Potosi. His new process is employed in the factory and the sample of the rubber it produces sent us is of excellent quality.

The Rubber Planting Interest.

THE LONDON ASIATIC RUBBER & PRODUCE COMPANY.

IN THE third annual report and statement of accounts for 1910, presented by the board of directors of the above company at the annual meeting, held April 27, the rubber crop harvested during 1910 was quoted at 180,477 pounds, against an estimate of 110,000 pounds, and an actual yield, in 1909, of 75,427 pounds. After deducting freight, insurance, landing and all sale charges, the average net price realized for the rubber was just under 6s. 1d. per pound. The cost of production, f. o. b. Port Swettenham, works out at 1s. 4d. per pound against



SEVEN YEAR OLD HEVEA.

(Caledonia Plantation, Wellesley, Straits Settlements.)

1s. 0¾d. per pound in 1909. The increase is attributable to the higher wages paid tapping coolies, large number of trees tapped for first time and consequent expenditure for new tapping tools, increased bonus for Eastern staff and depreciation. The crop of rubber for 1911 is estimated at 371,390 pounds.

To successfully handle the increased crop, new factories are building washing mills and crude oil engines have been dispatched to a number of the states, and are now in course of erection.

The net profit for the year is figured at £43,642, 3s., which with the amount brought forward from last year £5,241 17s. 7d. makes a total of £48,883 17s. 7d.; deducting amount of interim dividend of 10 per cent. paid in October, leaves £33,948 16s. 10d. The directors recommend payment of a final dividend of 15 per cent., leaving £11,448 16s. 10d. to be carried forward.

LUNAVA (CEYLON) TEA AND RUBBER ESTATES, LIMITED.

WHILE tea is avowedly the main crop of this company, the rubber yield is acknowledged to bring a welcome addition to the profits. According to the report presented at the fourth annual meeting held on April 12, the company had 74 acres under cultivation to rubber, and on the various estates 47,172 Para and 9,608 Ceara trees. The rubber crop last year amounted to 2,398 lbs., the cost of production of which was 2 shillings per pound, while the net price at which it sold was 5s. 9¼d. A final dividend of 6 per cent. was unanimously agreed to.

THE BIKAM (PERAK, F. M. S.) RUBBER ESTATE, LIMITED.

At the first annual general meeting of shareholders, held in London on April 11, the directors presented a report showing 32,657 pounds of rubber collected, for which, after deducting all sale charges, an average net price of 5s. 6.20d. was realized. The monthly output of rubber increased, from 1,266 pounds in June, 1910, to 5,772 pounds in December, 1910. The crop of rubber for the year 1911 is estimated by the manager at 100,000 pounds, against the prospectus estimate of 83,600 pounds. The cost of production, owing to the relatively small quantity of rubber harvested, the great care necessary in tapping new areas, and the fact that the coolies had to be taught to tap, was high.



OLDEST HEVEA TREES IN MALAY PENINSULA.
(Singapore Botanical Gardens.)

amounting, after adding all expenses, to 2s. 10.13d. per pound. The total area planted is 1,000 acres. The net profit, for the period from November 8, 1909, to December 31, 1910, amounted to £4,391 8s. 1d., from which the directors recommended the payment of a dividend of 8 per cent., which would absorb £3,600.

THE ANGLO-MALAY RUBBER COMPANY, LTD.

THE directors' report and statement of accounts of the above company, prepared for presentation at the fifth annual general meeting in London, on May 5, shows a crop of rubber for the year of 673,132 pounds, compared with 577,550 pounds for the preceding year, the average net price produced was 6s. 2d., against 6s. for 1909. The cost of production was, however, somewhat higher, amounting to 1s. 1d. per pound, f. o. b. Port Swettenham, compared with 10¾d. per pound in 1909. Higher wages paid to tapping coolies, large number of trees tapped for first time, enhanced export duty and increased bonus to staff, are reported as the factors in this higher cost of production. The net profit for the year, with the balance brought forward, amounted to £155,149, from which has been paid three interim dividends, each of 25 per cent. From the amount remaining, £42,649 14s. 1d. the directors recommended the payment of a final dividend of 25 per cent., leaving £5,149 14s. 1d. to be carried forward to next

account. The report describes all the mills and factories as in good condition, and new factories, with complete equipment, in course of erection on two of the estates. The crop for 1911 is estimated at 750,000 pounds, and the tappable area will be about 2,150 acres.

PLANTATION COMPANY NOTES.

The Villa Nova Rubber Estates and Trading Company, Ltd., capital £200,000, organized to acquire and operate the "Sobras da Fazenda, Sao Mauricio" rubber properties, in the State of Bahia, Brazil, offers an issue of £25,000 six per cent. convertible mortgage debentures, of £10 each. The proceeds, after payment of preliminary expenses, will be employed as working capital and for the general progress of the company.

Anglo-Java Rubber and Produce Co., Ltd., owning and operating several producing rubber estates in Java, recently announced an issue, at par, of £85,000 seven per cent. first mortgage convertible debentures, part of an authorized issue of £100,000 like securities, in debentures of £50, £100 and £500. The proceeds were to be used in taking up debentures already on the market.

Harrisons & Crosfield, Ltd., held a meeting on April 25 to sanction the creation and issue of a further £200,000, 5½ per cent. cumulative preference shares of £1 each to enable the directors to take advantage of exceptional opportunities offered to them of still further extending the business of the company.

RUBBER PLANTING INTERESTS.

The Vallambrosa Rubber Co., Limited, Edinburgh, Scotland, report the amount of rubber harvested for the twelve months ending March 31, 1911, at 411,300 pounds, compared with 371,306 pounds for the same period last year.

The Sungei Liang Rubber Co., Limited, with an issued capital of £33,000 out of a nominal capital of £70,000, has recently issued £25,000, 7 per cent. first mortgage debenture stock, which was offered to the shareholders of record at par, in the proportion of £2 stock for every three shares held.

Bambrakelly (Ceylon) Tea and Rubber Co. announce the declaration of an interim dividend of 2 per cent., payable March 18, on shares ranking as fully paid for the whole of the financial year.

RUBBER EXPORTS FROM THE FEDERATED MALAY STATES.

ACCORDING to published statistics, the exports of rubber from the Federated Malay States, during 1910, were more than double those of the preceding year and three and one half times as great as from Ceylon. The official totals are as follows: Rubber exports from Federated Malay States in 1910, 12,213,526 pounds, compared with 6,008,815 pounds in 1909. Taking the increase by states, Perak made 162 per cent.; Selangor, 95 per cent.; Negri Sembilan, 64 per cent. and Pahang, 8.944 per cent. increases, as compared with last year's output. Pahang produced 5,929 pounds in 1910, compared with 66 pounds in 1909.

RUBBER PLANTATION CORPORATIONS.

FOLLOWING are the names of companies recently organized to engage in the rubber-planting business that have been registered by the London Stock Exchange:

Bukit Tambun Coconut Co., Limited; capital, \$75,000; to acquire plantations in the District of Juroo, Province Wellesley, Federated Malay States, for the cultivation of rubber, coconuts, and other produce.

Yatadeira Rubber and Tea Co. (March 3); capital, £150,000; to take over the business of Ceylon planters, estate owners, merchants and manufacturers, carried on by the Yatadeira Tea Company of Ceylon, Limited. First directors: R. A. Cameron, L. B. Wyse, R. H. Eliot and T. G. Hayes.

Tirucalli Rubber Concessions (March 4); capital, £35,000. Planters of and dealers in rubber, jelutong and other gums, etc. To acquire property in Natal or elsewhere. First directors: Sir James Heath, Bart., D. H. Macpherson, H. Noyes and Sir T. Salter Pyne.

Selangor United Rubber Estates (March 6); capital, £90,000. To acquire any concessions, grants, decrees, rights, etc., in the Straits Settlements, Federated Malay States or elsewhere and to adopt an agreement with the Ernesti Syndicate, Limited.

Culloden Tea and Rubber Investment Co. (March 6); capital, £250,000. To adopt an agreement with J. D. Fletcher. First directors: J. D. Fletcher, A. A. Baumann and E. B. N. Mackenzie.

Deltota (Ceylon) Tea and Rubber Plantations; capital, £40,000. Agreement with Tea Plantations Investment Syndicate, Limited. First directors: Sir William W. Mitchell, J. E. McCabe, T. B. Smith and E. R. Wiggin.

Ulu Pari Rubber Estates; capital, £55,000. To acquire certain lands, known as the Ulu Pari Estates, Perak, Federated Malay States and to adopt an agreement with the Pari Syndicate, Limited. First directors: Sir John Furley, W. H. Wilson and R. M. Conolly.

Werompi (Ashanti) Rubber and Gold Concessions (March 13), capital £250,000. Gold and general miners, growers of rubber and other crops. To acquire 100 square miles of concessions in the southern district of Ashanti, West Africa, and to adopt an agreement with the British West Africa Traders, Limited. First directors: W. O'Malley, M. P., A. Higginson and Sir Broderick C. D. A. Hartwell.

Rotterdam-Deli Hevea (March 15). To acquire, from the Rotterdam-Deli Maatschappij, an estate at Bahilang, on the East coast of Sumatra, consisting of about 4,487 acres, for the cultivation of *Hevea Brasiliensis* rubber, and to adopt an agreement with the Globe Trust, Limited. First directors: Sir William B. Hudson, H. A. Van Nievelt, W. Norfolk, C. W. Skinner and O. F. Weise.

Deltota (Ceylon) Tea and Rubber Plantations, Limited, capital £40,000, to acquire the "Bowlna" and "Oolooowatte" estates, near Deltota, in the Lower Hewaheta district of Ceylon. On Oolooowatte, are 78 acres of Ceara, 15,000 trees being reported in 1909 as tappable. The rubber acreage is to be greatly extended.

Selangor United Rubber Estates, Limited capital £90,000. To acquire and work the New Comet, Brownwille and St. Andrew Estates, in the State of Selangor, Federated Malay States. The estates comprise 1,704 acres, mostly planted with *Hevea brasiliensis*, altogether 111,370 trees, the total appraised value of the property being £47,000.

Nyong Rubber Plantations, capital £150,000. To acquire the rubber plantations of Delane on the right bank of the Nyong river, in the colony of Camerun. In May, 1910, there were on the estate 529,000 rubber trees and more have since been planted.

Mooply Valley Rubber Company, capital £25,000. Rubber and general produce planters and merchants, and to acquire certain interests in the Palapilly and Mooply Valley estates, in Southern India. First directors: J. Fraser, H. Smail, T. C. Forbes and K. E. Nicoll.

Kombok Rubber Company (March 23), capital £100,000. To take over the Kombok Estate, district of Seremban, Negri Sembilan, Fed. Malay States. First directors: R. W. Giblin, J. Anderson and C. M. Cumming.

New Kali Selogiri (Java) Plantations, capital £70,000, formed to take over the Kali Selogori Estate of about 2,087 acres, on the northeast slope of the Merapi Mountain, sub-district of Suigatarnau, district of Banjoewangi, Residency of Besoki, South East Java, mostly planted with *Hevea* rubber, with some Rambong rubber and some interplanted cocoa and coffee. Of the total 70,000 £1 shares, 20,000 were to be issued as fully paid, in part payment of the purchase consideration.

Lowland Rubber Estates (Ceylon), Limited, capital £50,000, formed to acquire and operate a property of about 1,279 acres, being part of Molesworth Brothers Rubber Estates, in the lowlands of Ceylon, on the Mahaveli River. The company expect to have 200,000 Ceara trees ready for tapping, end of 1914.

THE RUBBER TRADE IN SAN FRANCISCO.

BY A RESIDENT CORRESPONDENT.

WHILE there are still complaints of depression in some lines of business, improvement is confidently looked for along all lines and has already reached manufacturers of mechanical goods, tires and druggists' sundries. The general feeling is that a prosperous time for the Pacific Coast is coming.

* * *

While making his tour of the State, General Manager F. A. Sieberling, of the Goodyear Tire and Rubber Co., who has been spending several months in the southern part of the State, passed a few weeks in San Francisco. From here he returned to Akron.

* * *

The B. F. Goodrich Co. of Akron has registered to do business in California under the laws of the State, with a declared capital of \$10,000. H. C. Miller, C. B. Raymond and W. P. Smith, each holding one share, qualified as incorporators. The company's business has been unusually good during the month. Mr. Cook, of the company's staff, has left for a visit to Akron.

* * *

Now that the Japanese have started in to equip their jinrickshas with rubber tires, there is likely to be a big demand for tires from that country, as the Japanese, though they have tried to make them at home, find that they cannot produce tires having the wearing qualities of those made in the United States. Diamond Rubber Company has just shipped them 4,000 pounds of "ricksha" tires.

* * *

The Powers Rubber Works of this city will substitute electricity for steam power in its Bay Point factory and will take 500 h. p. from the Great Western Power Company.

* * *

Walter Titcomb, formerly with the Pacific Coast Rubber Co., of this city, has associated himself with the Plant Rubber and Supply Co., San Francisco, who have secured in him the assistance of one of the oldest mechanical rubber goods men on the coast.

* * *

The United States Rubber Co. takes over the business of the Pacific Coast Rubber Co., in Oregon and the three stores of the Washington Rubber Co., in Washington. The purchase was made in accordance with their policy to cover the coast through the Gorham-Revere Rubber Co., recently organized. In Portland, Ore., the branch stores of the former Gorham Rubber Co. and of the Pacific Coast Rubber Co. have been merged and the name changed to the Gorham-Revere Company, with F. S. Winslow, formerly manager of the Pacific Coast Rubber Co., in charge. The Gorham Co. branch and the Washington Rubber Company branch at Seattle are also consolidated, with Arthur J. Hamlin, of the Gorham branch, as manager. The stores in Spokane and Tacoma, Washington, while still retaining the name of the Washington Rubber Company, will be under the supervision of the Gorham-Revere Rubber Co. Mr. Thompson has been given the management of the Spokane store, vice Mr. Biddinger resigned. Otto Richter will continue as manager of the Tacoma store. W. J. Gorham, San Francisco, is now in the northern cities, looking after the details of the various changes which have taken place.

* * *

After being on the sick list for the past three weeks, A. H. Gregory, manager of the San Francisco branch of the New York Belting and Packing Co., is again in harness. W. L. Eaton, also with this company, is absent on a trip to Portland.

The Phoenix Rubber Co. and the Republic Rubber Co. are moving into their new offices at 604 Van Ness avenue.

The Central American Rubber Co. has been incorporated at Spokane and the Western Tire Co. at Seattle, Wash.

E. H. Parish and J. Brendan, of the Gorham-Revere Rubber Co., which has a branch at Osaka, Japan, are now making a trip to that country.

During the past month there has been an unusually large demand for rubber boots for the Alaskan trade, some of the local firms being completely sold out.

After serving, for a time, as chief accountant for the former Revere Rubber Co.'s branch store, H. E. Crocker has returned to the factory to assume a similar position.

THE RUBBER TRADE AT AKRON.

BY A RESIDENT CORRESPONDENT.

ALTHOUGH the tire departments of all the Akron rubber factories have been running full force, the backward spring has affected the tire business in Ohio. The country roads are in worse condition than they have been for many years and the Good Roads movement has been given a corresponding impetus. But dealers' shelves are still loaded with tires, although the advent of fine weather will be followed by a rush that will speedily deplete the stocks and then, those dealers who have been tardy in placing orders, will have to wait for a supply. There has been a heavy demand for bicycle tires in all the factories.

* * *

Evidence of the popularity of the No-Rim-Cut tire, manufactured by the Goodyear Tire and Rubber Co., is furnished by their establishment, within the past six months, of fourteen new branches in various parts of the States. The demand for these tires trebled during 1910, and the prospects are that the business will be even larger during the current year. The company's Cleveland branch has been removed to 1733 Euclid avenue, and its Chicago branch to 177-179 N. Michigan avenue.

The motorcycle record, made by Jake De Rosier at Los Angeles, California, of 84 miles in an hour, is said to have been made possible by his use of Goodyear "blue-streak" motorcycle tires.

* * *

Several lines of waterproof garments, including waterproof coats, ponchos, capes, slickers, etc., which have been approved for use by the United States army, have been placed on the market by the Federal Water Proofing Co.; this department of their business is growing rapidly.

* * *

The Rubber Goods Supply and Manufacturing Co., of Akron, was incorporated under the laws of Ohio on April 7, with a capital of \$10,000. The principal incorporators are Clinton Falor, C. Forest Falor and E. H. Trump. The company is composed of a number of experienced rubber men who expect to commence the manufacture of rubber goods on a small scale immediately and have bought a small building in South Akron for this purpose.

* * *

The Miller Rubber Co. is adding another story to one of its buildings, 60 x 100 feet. The additional story will be used for tire manufacturing.

* * *

Invited by the Diamond Rubber Co., a party of over 100 stationery engineers visited their plant on April 4 to inspect their new turbine engine, erected for them, as a supplementary engine, by the Allis-Chalmers Co. The latter company's salesman, Mr. Wolf, delivered a "talk" on the turbine engine and the visiting engineers were entertained at a social and smoker by the Diamond Company.

O. C. Barber, a director and one of the founders of the company, was recently entertained at the Country Club at a dinner given to commemorate his seventieth birthday. W. A. Johnson, president of the Rubber Products Co., of Barberton, was one of the principal speakers and complimented Mr. Barber on his successful work in building up the Diamond Rubber Co., the

Diamond Match Co. and other important industries of Akron and vicinity, and engaged him on his late and heavy condition.

The company's boot and shoe department is growing rapidly, and in the waterproofing department additional machinery is being installed. The advertising department has moved into its new and commodious quarters in the west wing addition to the main office building. A new south wing is being built on the new office, to be used by the offices of the mechanical goods department.

The growth of the company's business may be gathered from the fact that since January 1, of the current year, twenty-four new Diamond branches or service stations have been established in various parts of the country.

The company have moved into their new and completely equipped quarters at the corner of Spring Garden and Broad streets, where they will have offices, blacksmith shop, repair shop, sales rooms and storage rooms and a complete branch store.

H. J. Lee has resigned as manager of the company's branch at Atlanta, Georgia, and J. F. Lanier has been placed in charge.

The Diamond Rubber Co. has been awarded the contract, amounting to \$75,000, for the insulated wire, to be used in the new Municipal Building in New York City.

* * *

The manager of the New York branch of The Swinehart Tire and Rubber Co., which was recently removed from 875 Seventh avenue to 1924 Broadway, is E. O. Hoopenjeimer, a former Akron man.

* * *

The Prudential Rubber Co. has been incorporated with a capital stock of \$10,000 under the laws of Ohio. The incorporators are Frank E. Millhoff, G. B. Motz, Ed. A. Millhoff, W. E. Young and H. E. Andress. They are reported as about to start a general merchandizing business and may ultimately engage in the manufacture of tires.

* * *

The Stein Double Cushion Tire and Rubber Co. is reported as having increased its tire output this spring by at least 60 per cent.

* * *

The Consolidated Rubber Tire Co. is opening a branch at 1846 Euclid avenue, Cleveland, Ohio, of which P. D. Beech, formerly one of the company's traveling salesmen, has been given charge. They have also opened a new branch in Baltimore, Maryland, at 404 Orchard street.

* * *

The Star Rubber Co. has opened a new service station for tires with the Buick-Scott Co., 31 Woodland avenue, Detroit, Michigan.

* * *

The B. F. Goodrich Co. are remodeling their new office building on Broad street, Philadelphia, which is located near the Diamond Rubber Co.'s branch in that city.

* * *

R. J. Firestone, sales manager of the Firestone Tire and Rubber Co., has recently completed an extended tour of the Western and Pacific Coast branches of that company.

* * *

Buckeye Rubber Co., now running night and day, expect this summer to double their tire capacity. At present the factory is thirty days behind orders. The shipping and receiving rooms will be extended by the addition of a second story, for which plans have been prepared and bids received, and plans have also been completed for a four-story building, 60 x 82 feet, which will be adjacent to the present curing department and will be used for tire building. The completion of both buildings is expected this summer. The company's general manager, F. E. Holcomb, recently spent a few days in Michigan.

The American Tire and Rubber Co., having completed their organization and purchased property, are installing rubber machinery and expect to begin manufacturing within sixty days. Incorporated with a capital stock of \$200,000, the company is under the direct management of thoroughly experienced rubber manufacturers, the superintendent, W. J. Yeager, having been ten years with the Diamond Rubber Co., two years with the India Rubber Co., four years with the Goodyear Rubber Co. as assistant superintendent, and nine years with the Stein Tire and Rubber Co. as superintendent. The secretary, F. L. Kryder, was formerly connected with The Peoria Rubber Co., Peoria, Illinois. The property purchased by the company was formerly owned by the Aetna Mills and is located on Beech street, with convenient railroad facilities, hydraulic power and cheap transportation by way of the Ohio Canal. They expect to begin by manufacturing solid and pneumatic carriage and automobile tires and inner tubes, and later a puncture proof automobile tire with a resilient elastic filler and a general line of mechanical goods. The company expects ultimately to reclaim their own rubber and to manufacture and place an improved rim for solid and pneumatic tires on the market. The company claims to have an improved process for reclaiming rubber and expects to start with a capacity of 300 tires per day.

THE RUBBER TRADE IN CINCINNATI.

BY A RESIDENT CORRESPONDENT.

THE United States Tire Co. is the latest company to join the local rubber colony. The company has just completed negotiations whereby it has secured a ten-year lease on a building at 120 and 122 East Eighth street, the total rental involved for the period being \$25,000. The building will be ready for occupancy July 1, and will be one of the most modern and complete in this State. The company has heretofore been represented by dealers, but business has grown to such an extent that it is necessary to operate a branch house in this city. The location secured is in the automobile salesroom district of the city, which gives the company a decided advantage. The agencies of the Michelin Tire Co., G & J Tire Co., and Morgan & Wright will be consolidated and operated from the new branch.

* * *

Frederick T. Luth, who has been connected with local automobile tire branches, has become associated with the Cincinnati branch of The Diamond Rubber Co.

* * *

According to reports submitted to the board of directors of the Cincinnati Rubber Manufacturing Co. at their annual meeting, the company has enjoyed a prosperous year and business in all departments has been exceedingly good. The directors declared the first dividend at the rate of 4 per cent. which was paid stockholders on April 15.

* * *

The Schaefer Rubber Co., operating a retail rubber store, one of the largest of its kind in the Middle West, dealing in rubber sundries, rubber shoes and rubber clothing is expanding its business and has opened a similar store in Detroit, Mich. The new branch is in charge of George Schaefer, son of the president of the company.

* * *

G. A. Eisman has been appointed local representative of The B. F. Goodrich Co. Mr. Eisman will cover southern Ohio, Kentucky, Indiana and Tennessee, with headquarters in this city.

* * *

The Atlas Rubber and Belting Co., No. 212 Main street, has been appointed distributing agents for the mechanical goods of The B. F. Goodrich Co. This firm will have charge of the territory of southern Ohio, Tennessee, Kentucky and Indiana, the same territory covered by the Cincinnati branch of that company.

News of the American Rubber Trade.

A CHICAGO FIRM'S RAPID PROGRESS.

E. F. NORTON & Co., Chicago, dealers in scrap rubber, announce their removal into new quarters, southwest corner of Orleans and Ontario streets, that city, where they will occupy the entire building, of four stories and basement, of which an illustration is given herewith.

The firm started, on a very modest scale, in the latter part of November, 1909, but did not actually engage in the scrap rubber business until January, 1910, when they occupied a suite of offices at 145 La Salle street. The rapid growth of their business compelled them to remove, in March of that year, to



THEIR NEW BUILDING.

their present quarters on South Canal street, and the business continuing to increase, they had to rent an additional warehouse on Canal street. It was not long, however, before these quarters too were outgrown, and they eventually secured the building they will now occupy.

With light on three sides and containing approximately fifty thousand feet of floor space, with a private switch track from the Chicago, Milwaukee & St. Paul Railroad on the premises, and two electric elevators, the handling of receipts and shipments will be greatly facilitated in their new quarters, and they will be able to take care of carload lots, with the least possible labor. The excellent light will also facilitate the work of assorting and the number of baling presses used will also be increased, enabling the firm to conveniently handle the largest volume of business, with which their patrons, a continuation of whose favors they solicit, may entrust them.

CANADIAN GENERAL ELECTRIC CO., ANNUAL REPORT.

THE annual report of the directors of the Canadian General Electric Co., submitted to the general meeting held recently in Toronto, shows gross profits for the year ending December 31, 1910, exceeding those of the preceding year by nearly 50 per cent. After setting aside \$188,087 for depreciation and \$76,820.68 for interest, there remained the sum of \$646,300.08. After deducting \$494,624.83 for dividends on preferred and common stock, there was a balance of \$157,675.25 to carry to the credit of profit and loss. Added to the balance already existing, this makes \$311,143.31 in this account, which, with the reserve fund of \$1,669,531.95, makes the total surplus \$1,980,675.26. Both as to volume and price, the past year's business was reported as having been satisfactory and unfinished business to the value of

\$4,000,000, on which no profit has been taken into account, is carried forward to next year.

During the year important improvements on the company's plant have been made, including a large addition to the machine shop at the Peterborough works. In order to increase the capacity of the structural steel department, the lands and plant of the Canadian Shipbuilding Co., near Bridgeburg, Ont., have been leased on terms that make them the company's property in twenty years.

UNITED STATES RUBBER COMPANY DIVIDENDS.

At the annual meeting of the above company, held in New York on April 6, the usual quarterly dividends of 2 per cent. on first preferred and 1½ per cent. on second preferred shares to stockholders of record April 14, was declared payable, without closing of the transfer books, on April 29, 1911. No action on the payment of a dividend on the common stock was taken prior to the adjournment of the meeting subject to the call of the chair. The annual meeting of the stockholders of the company will be held May 16, 1911, at New Brunswick, New Jersey.

CANFIELD RUBBER COMPANY.

THE Canfield Rubber Company, Bridgeport, Conn., are erecting an addition to their plant in that city, in the shape of a two-story brick building 36 x 140 feet. It will be used for office purposes and for the accommodation of their knitting and winding departments, which have been overcrowded owing to the steady increase in the company's business.

NEW BOSTON MANAGER FOR U. S. TIRE CO.

E. H. KIDDER, who succeeds Mr. Langmaid as manager of the Boston branch of the United States Tire Co., is well known in automobile trade circles, in connection with tire interests. A few years ago, he represented one of the big tire concerns on the Glidden tour, and soon afterwards became Boston manager for the Continental Tire Company, the business of which he was instrumental in increasing greatly. When the United States Tire Company was formed he was given charge of its solid tire department, and his promotion to the management of the Boston branch is the outcome of his assiduity and success in that position.

TRADE NEWS NOTES.

THE dividend paid by the General Rubber Co., on March 20, amounted to 10 per cent., not 20 per cent. as was made to appear through a typographical error, in the April 1 number.

The Goodyear Tire and Rubber Co., Akron, Ohio, have removed their Chicago branch office to Nos. 177 and 179 North Michigan avenue.

An idea of the magnitude of the rubber tire business in the United States is afforded by the records of the shipping department of one of the big concerns. During the month of March there were shipped from the factories of the Diamond Rubber Company, Akron, Ohio, 100,000, all but a baker's dozen, of automobile tire casings. This means four and a half freight cars loaded with tires despatched every working day, and had they been shipped simultaneously it would have required more than a hundred cars, made up into two trains to transport them.

The Gutta Percha and Rubber Manufacturing Company, New York, manufacturers of mechanical rubber goods, have removed their San Francisco office to 34 Fremont street. They also announce the removal of their Chicago store to 301 West Randolph street, corner of Franklin.

Revere Rubber Co., Chelsea, Massachusetts, manufacturers of mechanical rubber goods, have removed their Chicago branch from 168 Lake street to 158 West Lake street.

UNITED STATES TIRE CO.'S SELLING ORGANIZATION.

To systematize and facilitate their business, the United States Tire Company, formed to handle the output of the Continental, the G & J, Hartford and Morgan & Wright concerns, has recently reorganized its sales force, at the head of which has been placed J. D. Anderson, formerly general manager of the Hartford Rubber Works Co., as sales manager. The country has been divided into three sections, for the better control of selling operations: The Eastern Division with head offices in New York, will be managed by O. S. Tweedy, formerly sales manager of the Continental Caoutchouc Co.; the head office of the Central Division, with A. I. Philp, formerly vice-president and sales manager for Morgan & Wright at its head, will be in Chicago, and at San Francisco, under the management of Joseph Weston, former secretary of Morgan & Wright, will be the main offices of the Western District. A recent order for 50,000 tires, from the United States Motor Company, for the equipment of Columbia, Maxwell, Brush and Stoddard-Dayton cars, was a record order for the company's sales department.

DIAMOND RUBBER CO.'S EXPANSION.

The Diamond Rubber Co., Akron, O., have opened a branch at San Diego, Cal., to enable them the better to take care of their rapidly increasing business in the extreme southern portion of that State. The new branch is located at No. 1260 Fourth street and W. A. Tondro is in charge. The company has also opened a new branch at Salt Lake City, Utah, of which E. L. Hiteman is manager. At Fresno, Cal., in the Masonic Temple building, K and Merced streets, a Diamond Rubber Company office has been opened and arrangements have been made to open new branches in Oakland and Sacramento, Cal., and Spokane, Wash. This will make fifty-four direct Diamond Rubber Co. offices distributed throughout North America.

OXFORD RUBBER COMPANY.

ORGANIZED to continue the business formerly carried on under the same title, by a co-partnership, the Oxford Rubber Company, Cambridge, Mass., occupy five buildings on Main street, running through to State street, in that city, the aggregate floor space being 25,000 feet. Three of the buildings are equipped for proofing light and heavy materials, and in one, a four-story structure, they manufacture rubber clothing, to which they propose to add the production of proofed cloth for the cutting up trade. The officers of the company, which is doing a good volume of business, are as follows: Isaac MacPherson, president; George B. Robeson, vice-president and secretary, and Warren MacPherson, treasurer.

PERSONAL MENTION.

WARREN M. SALISBURY, head of the firm of W. H. Salisbury & Co., Chicago, dealers in rubber goods, has built and will occupy next month, a beautiful villa on the shores of Onontia Lake, near Pittsfield, Mass. It follows the old English style of Robert Adam, and will be named Tor Court.

William A. Johnstone, of the Rubber Products Co., has presented the "Augusta" apartments, on Scoville avenue, Cleveland, to the Salvation Army as a house for working girls, to be opened by May 1. The buildings are valued at \$47,000.

Frank E. Blanchard has been appointed assistant sales manager of the Firestone Tire and Rubber Co., and will make his headquarters at the factory, in Akron, Ohio. Mr. Blanchard leaves The Whitman & Barnes Manufacturing Co., of which he has been general manager for 16 years, previously having had charge of their rubber tire trade.

A. A. Cushman, formerly superintendent of the National India Rubber Company, Bristol, R. I., is no longer connected with that corporation.

"The Rubber Country of the Amazon," by Henry C. Pearson, is an interesting story of india-rubber, the people who produce it and the country where most of it is produced.

HOW THE GOODYEAR TIRE AND RUBBER CO. IS GROWING.

The establishment, within the past six months, of fourteen new branches, indicates the progress the Goodyear Tire and Rubber Co. (Akron, Ohio), is making. This they attribute largely to the popularity of their "No-Rim Cut" tire, the sales of which doubled during 1910. The company now has branches in one hundred and twenty cities in the United States and Canada, those recently opened being in Columbus, O., Dallas, Tex., Des Moines, Ia., Forth Worth, Tex., Indianapolis, Ind., Jacksonville, Fla., Memphis, Tenn., and Oklahoma City, Okla. The company have also recently opened a depot, store and repair department at 1733-35 Euclid avenue, Cleveland, O.

AMERICAN RUBBER MANUFACTURING CO.

THE AMERICAN RUBBER MANUFACTURING Co., with offices in San Francisco and factory at Emeryville, California, who have recently made a two-story addition to their plant, 40 x 80 feet, for the accommodation of their cotton hose looms, send us copies of their newly issued price list. The company manufacture belting, rubber and cotton and cotton rubber lined hose, packing, mats and matting, tubing, valves, rubber covered rolls, springs, and a full line of molded and mechanical goods, which they describe in their price list, a neatly printed 16-page publication in which they quote prices.

TRADE NEWS NOTES.

Jenkins Bros., manufacturers of the line of valves bearing their name, and of the well-known Jenkins packings, announce their removal from John street, where they have been located for upwards of thirty years, to quarters better adapted to the requirements of their increasing business at 80 White street, New York.

The National India Rubber Company, Bristol, R. I., as lowest bidders, have been awarded a contract for supplying the United States government with submarine telephone cables, for use at Newport, R. I.

The Standard Rubber & Cable Co., Bridgeport, Conn., announce that Mr. W. J. Burns has resigned as president of the company and is no longer connected with it in an official capacity. The company, which manufactures tires, special moulded work and insulated wire, is preparing to increase its factory space and producing capacity and reports prospects good for a material growth.

The Swinehart Tire & Rubber Co., Akron, Ohio, have removed their New York branch to No. 1924 Broadway. Here their solid, pneumatic and internal wire tire departments are now housed with other departments; friends and customers are invited to visit them in their new quarters.

The Firestone Tire & Rubber Co., Akron, Ohio, are elated at the showing made by their Firestone tires at the racing meet for 1911, at Bablo Beach, Fla. Their durability was a factor in some of the most notable victories, many of them won without changing a tire, and they were used on many of the most famous racing cars at the meet.

The Walpole Rubber Company and Massachusetts Chemical Co., New York and Walpole, Mass., manufacturing rubber goods, druggists sundries, friction and rubber tapes, varnishes, paints and compounds, rubber flux, moulded rubber and rubber and electrical insulation, announce the removal of their New York offices, to more commodious and conveniently located quarters, at 80 to 82 Reade street.

The Fisk Rubber Company, Chicopee Falls, Massachusetts, have been awarded the contract for equipping the apparatus of the New York City fire department with pneumatic tires. The award followed an exhaustive test of the wearing qualities of tires. The entire outfit of the fire department of Springfield, Massachusetts, including, in addition to the automobiles used by the chiefs, the engines, ladder trucks and hose wagons has been using Fisk pneumatic tires for several months and they have given excellent satisfaction.

NEW INCORPORATIONS.

AMERICAN Rubber and Fabric Co., March 20, 1911, under the laws of Delaware; authorized capital, \$1,500,000. Incorporators: Robert L. Van Dusen, Herbert N. Combs—both of Philadelphia, Pennsylvania, and Francis H. Hoffecker, Wilmington, Delaware. The company has been incorporated to buy and sell rubber and own rubber plantations in any part of the world.

Anglo Tire Co., March 27, 1911, under the laws of New York; authorized capital, \$5,000. Incorporators: Maurice Sanders (president), Jennie Sanders and Joseph Sanders—all of New York city. Location of principal office: No. 1612 Broadway, New York.

British-American Rubber Clothing Manufacturing Co., March 20, 1911, under the laws of New York; authorized capital \$30,000. Incorporators: G. A. Blasi, V. Maronna—both of Brooklyn, New York, and Joseph Vergara, New York City. To manufacture rubberized clothing. Location of principal office: Brooklyn, New York.

Co-operative Rubber Co., April 7, 1911, under the laws of New York; authorized capital, \$500,000. Incorporators: A. C. Smith, Lynbrook, Long Island; Charles P. Butler, Jersey City, New Jersey; and M. F. Lynch, Brooklyn, New York. To manufacture rubber goods. Location of principal office: East Setauket, New York.

Crist Rubber Co., March 4, 1911, under the laws of New York; authorized capital \$10,000. Incorporators: George B. Crist, Charles P. Jones—both of Utica, New York, and George H. Burgess, Cassville, New York.

Davenport Leatherware Co., April 20, 1911, under the laws of New York; authorized capital, \$200,000. Incorporators: Joseph J. Coyne, Philadelphia, Pennsylvania; Lionel C. Scheuer and Max Frank—both of New York City. To manufacture leather and rubber goods. Location of principal office: New York City.

De Luxe Rubber Co., March 31, 1911, under the laws of New Jersey; authorized capital, \$25,000. Incorporators: William Cox, Jr., John S. Cox, George J. Reuter and Leslie R. Pratt—all of Jersey City, New Jersey. To manufacture, purchase, sell and repair automobile tubes and tires and all goods of which rubber is a component part.

Featheredge Rubber Co., March 31, 1911, under the laws of Illinois; capital, \$20,000. Incorporators: Benjamin B. Felix (president and treasurer), William Brown, Jr., and William Sherman Hay (secretary). B. F. Felix is vice-president of the company. Location of the principal office: No. 414 West Indiana street, Chicago, Illinois. To take over the business of The N. Tire Rubber Sponge Co.

D. C. Hall, Incorporated, March 24, 1911, under the laws of Connecticut; authorized capital, \$20,000. Incorporators: Jewett C. Hall, Julia N. Hall—both of Norwalk, Connecticut, and James A. Donohue, Jersey City, New Jersey.

Hercules Tire and Rubber Co., March 23, 1911, under the laws of Delaware; authorized capital, \$100,000. Incorporators: E. G. Bossinger, Joseph T. Murray and F. L. Cleveland—all of Pittsburg, Pennsylvania.

Theodore Hofeller & Co., March 9, 1911, under the laws of New York; capital, \$200,000. Incorporators: Theodore Hofeller, Eugene D. Hofeller and Mirza D. Short—all of Buffalo, New York.

Hudson Rubber Co., April 7, 1911, under the laws of New York; authorized capital, \$5,000. Incorporators: William Jude, Henry Jude—both of New York City, and Turner J. Oakley, Wakefield, New York. Location of principal office: New York.

Maguire Rubber Co., April 15, 1911, under the laws of New York; authorized capital, \$25,000. Incorporators: Hugh C. Murray, C. Monteith Gelfini and James M. Wright—all of No. 68 William street, New York City.

Overland Tire Co., March 10, 1911, under the laws of Illinois; capital, \$5,000. Incorporators: George S. Pines, Asher J. Goldfine and Edward R. Newman. Norman L. Steinberg, a

thoroughly capable tire-man, is president of the new company which has moved into new quarters at 1409 Michigan avenue, Chicago, Illinois, where they are doing a good business. Their line includes casings, tires and some tire accessories and they promise to specialize a high-grade tire at low prices.

Peerless Tire Filler Co., March 24, 1911, under the laws of Delaware; authorized capital, \$100,000. Incorporators: W. F. P. Lofland, W. I. N. Lofland, and John S. Collins, Jr.—all of Dover, Delaware. To deal in automobile and motorcycle tires and tire fillers.

Prudential Rubber Co., April 4, 1911, under the laws of Ohio; authorized capital, \$10,000. Incorporators: Frank C. Millhoff, Edward A. Millhoff, C. B. Motz, W. E. Young, and H. E. Anderson. To deal in rubber tires, and all goods in which rubber is a component part.

Regal Specialty Co., April 17, 1911, under the laws of New York; authorized capital, \$10,000. Incorporators: James A. Ryan, Theresa Marsielje and Delbert E. Marsielje—all of Rochester, New York. To manufacture rubber goods. Location of principal office: Rochester, New York.

The Rubber Manufacturing Co., April 1, 1911, under the laws of New York; authorized capital \$10,000. Incorporators: Harry H. Honigbaum, William S. Honigbaum, and Berthan Jackson, all of New York City. To manufacture rubber proofing material, etc. Location of principal office: New York.

GUAYULE AT THE RUBBER EXHIBITION.

The Continental Rubber Company of New York, will have an interesting exhibit at the forthcoming International Rubber Exhibition, which will open in London in June. Their display will include, in addition to a full line of samples of their guayule rubber, a miniature rubber plant in operation, with the aid of which capable demonstrators will show to those interested, the methods of compounding and vulcanizing various grades of rubber goods made from guayule rubber.

TRADE NEWS NOTES.

The Thermoid Rubber Co., Trenton, N. J., have opened branch offices in the Perin building, 5th and Race streets, Cincinnati, O., where they will carry a full line of the Thermoid automobile goods.

Having withdrawn from the firm of Theodore Hofeller & Co., Buffalo, N. Y., Julius Hofeller has formed a new company in that city, to deal in scrap rubber, rags and paper stock. The new company, which has its offices at 836 Chamber of Commerce building, Buffalo, has warehouses at Depew, near Buffalo. Julius Hofeller is president; Leo Loeser, vice-president; and Isadore Loeser, secretary and treasurer of the new firm.

Firestone Tire and Rubber Co., Akron, Ohio, have removed their New York quarters into No. 1871-75 Broadway, the three upper floors and basement of which they will use for storage and shop equipment, special attention being paid to side-wire motor truck tires and rims. On the store floor, they will have facilities for housing a large number of vehicles, while their tires are receiving attention. The new branch, with its facilities and increased accommodations, is in keeping with the steady growth in the company's business since their branch, one of the oldest in the city, was established in 1900. Dan C. Swander is in charge.

The Republic Rubber Co., Youngstown, Ohio, have established a new branch at 126 West Sixth street, St. Paul, Minn.

A firm of importers in the Levant informs an American consulate of a list of goods in which it is interested to the extent of being desirous of entering into business relations with firms exporting them from the United States. Rubber shoes for men, women and children are included in the list. On addressing the Bureau of Manufactures, Department of Commerce and Labor, Washington, District of Columbia, and quoting the file number 6549 particulars may be obtained.

UNITED STATES RUBBER CO.'S ISSUES.

TRANSACTIONS on the New York Stock Exchange for four weeks ending April 22.

COMMON STOCK, \$25,000,000.

[The treasury of a subsidiary company holds \$1,334,000.]

Last Dividend, April 30, 1900—1%.

Week April 1	Sales	6,700 shares	High 43 $\frac{1}{4}$	Low 41 $\frac{1}{4}$
Week April 8	Sales	17,640 shares	High 43 $\frac{3}{8}$	Low 40 $\frac{1}{2}$
Week April 15	Sales	1,850 shares	High 41 $\frac{3}{4}$	Low 40 $\frac{3}{4}$
Week April 22	Sales	5,800 shares	High 41 $\frac{1}{4}$	Low 38

For the year—High, 47 $\frac{1}{8}$, March 1; Low, 36, January 6.

Last year—High, 52 $\frac{1}{2}$; Low, 27.

FIRST PREFERRED STOCK, \$39,824,400.

Last Dividend, January 31, 1911—2%.

Week April 1	Sales	300 shares	High 114	Low 113
Week April 8	Sales	735 shares	High 114 $\frac{1}{4}$	Low 113
Week April 15	Sales	600 shares	High 114 $\frac{3}{8}$	Low 112 $\frac{3}{4}$
Week April 22	Sales	500 shares	High 112 $\frac{1}{2}$	Low 111 $\frac{3}{4}$

For the year—High, 114 $\frac{7}{8}$, April 10; Low, 109 $\frac{1}{2}$, January 18.

Last year—High, 116 $\frac{1}{2}$; Low, 99.

SECOND PREFERRED STOCK, \$9,965,000.

Last Dividend, January 31, 1911—1 $\frac{1}{2}$ %.

Week April 1	Sales	1,050 shares	High 77 $\frac{1}{2}$	Low 77
Week April 8	Sales	100 shares	High 77 $\frac{1}{2}$	Low 77 $\frac{1}{2}$
Week April 15	Sales	— shares	High —	Low —
Week April 22	Sales	100 shares	High 76 $\frac{5}{8}$	Low 76 $\frac{5}{8}$

For the year—High, 79, March 1; Low, 72 $\frac{1}{2}$, January 31.

Last year—High, 84; Low, 59 $\frac{1}{2}$.

SIX PER CENT. TRUST GOLD BONDS, \$19,000,000.

Outstanding of the 1908 issue of \$20,000,000.

Week April 1	Sales	42 bonds	High 103 $\frac{3}{4}$	Low 103 $\frac{5}{8}$
Week April 8	Sales	135 bonds	High 103 $\frac{5}{8}$	Low 103 $\frac{1}{2}$
Week April 15	Sales	28 bonds	High 103 $\frac{3}{8}$	Low 103 $\frac{5}{8}$
Week April 22	Sales	83 bonds	High 104	Low 103 $\frac{7}{8}$

For the year—High, 104, February 11; Low, 103, January 7.

Last year—High, 104 $\frac{1}{2}$; Low, 101 $\frac{1}{4}$.

FINAL DECREE IN THE SELDEN SUIT.

A FINAL decree was entered recently in the United States Circuit Court in the Selden automobile patent case. It will be remembered that the Circuit Court of Appeals a short time ago reversed a decision of the lower court to the effect that half a dozen companies were infringing the Selden patent. The final decree, following this decision of the Circuit Court of Appeals, taxes against the plaintiffs, the Columbia Motor Car Company and George B. Selden, the costs in the suit, amounting to \$31,880.42.

TRADE NEWS NOTES.

WELLING S. KATZENBACH, of Katzenbach & Bullock Co., Trenton, N. J., importers and dealers in chemicals, is visiting the rubber trade in the Middle West.

The New York office of Meyer Cohn, dealer in rubber waste, of Hanover, Germany, has been removed from 117 Chambers street to the Irving Building, No. 2 Hudson street. A chemical department for rubber manufacturers, in charge of Mr. Emil Sichel, has been added by the firm, the scrap rubber department being as before, in charge of Mr. Chas Baron.

A. W. Brunn, New York, announces that, having acquired all the capital stock of the Rubber Import Co., New York, he will continue the business under his own name, bestowing special attention on the importation of crude rubber, gutta percha, gutta jelutong (pontianac) and balata, waste rubber and rubber substitutes which he will sell, either on a c. i. f. basis or on landed terms. His offices will remain in the Produce Exchange Building, New York.

Woven Steel Hose and Rubber Co., Trenton, N. J., have appointed the National Sales Corporation, 248-250 West street, New York, with offices at Chicago, Ill., and Detroit, Mich., factory sales manager for the Autobestine Brake Lining, for automobile brakes.

Walpole Rubber Co., Walpole, Massachusetts, announce that Mr. E. C. Green has rejoined the staff of that corporation in the capacity of general purchasing agent of the consolidated companies, with headquarters at the factory office in Walpole.

PARAHIDE RUBBER GOODS.

A SECRET compound of rubber and shredded sole leather is the basis of the organization of the Parahide Rubber Co., Boston, incorporated under the laws of the State of Massachusetts, with a capital of \$2,000,000, and a \$25,000 plant in Salem, Mass., for the manufacture of "Parahide" goods. These include, in addition to rubber soles and heels, which they have already placed on the market, automobile tires, carriage tires, step-pads, mats, etc., in infinite variety. It is claimed that the compound, while possessing extraordinary durability, has all the resiliency of ordinary rubber goods, together with remarkable non-slip properties, that it is an ideal material for shoe soles of all kinds, being not only waterproof, non-absorptive and non-slipping, but free from the tendency to "draw" the feet. Parahide tires have been tested up to a mileage of 5,000 miles, without suffering a puncture, while they are said to reduce the danger of slipping or skidding to a minimum, owing to the fact that the material does not wear smooth and slippery, the fact that tires made from Parahide are reduced one-half in cost, being also an important point in their favor. The company owns and controls all the patents, formulae, etc., for the United States, England and her colonies, and France.

MR. REEVE GOES TO EUROPE.

ARTHUR REEVE, of the United States Rubber Co., sailed for Europe, April 27, on the Hamburg-American steamer *Cleveland*, to be gone five or six weeks on some special business for his company. Mr. Reeve has had twenty-five years' experience, starting in the Woonsocket factory under the late Joseph Banigan, where he received excellent training both in mill work and office work, so that he knows both the making and selling of rubber footwear very thoroughly.

TRADE NEWS NOTES.

ONE of the enjoyable banquets given the officers and employees of the Goodyear Fire and Rubber Co., from time to time, was recently held at the Barberton Inn, Barberton, Ohio. Responses to toasts were made by P. W. Litchfield, superintendent of the factory; W. D. Shilts, auto tire sales manager, and others; C. W. Seiberling acting as toastmaster. A thoroughly good time was enjoyed by all present.

The Firestone Fire and Rubber Co., Akron, Ohio, have opened a new direct factory branch in Atlanta, Ga., at 58 Auburn avenue. Wylie F. West, who has been transferred from the St. Louis branch, is in charge.

A customer at York, Pa., writes the Goodyear Tire and Rubber Company at Akron, to the effect that he has on his Reo car one of the Goodyear quick detachable tires, now worn down to the fabric but still in service, which has been in constant use ever since the car was purchased, five years ago. It has outworn two sets of tires of other makes.

The Featheredge Rubber Co. has succeeded the "N" Tire Rubber Sponge Co. and will carry on the former company's business at 408-416 W. Indiana street, Chicago, Ill. No change will be made in the personnel of the company.

A special ignition wire for aeroplanes and all types of flying machines is being made by the recently incorporated Standard Rubber and Cable Co., Bridgeport, Connecticut. They have brought it out under the title of Standard Aero-cable, and as a high-class article, designed particularly for the purpose intended, it is a new departure in this line.

In Denver, Colorado, the W. C. Hendrie Rubber Co. will establish a plant for the manufacture of rubber pump valves and moulded rubber goods. It will be the only establishment of the kind between Chicago and the Pacific Coast, and will be a distributing station for this section.

SEND for Index (free) to Mr. Pearson's "Crude Rubber and Compounding Ingredients."

Review of the Crude Rubber Market.

THE market opened with unusual vigor, but has for the greater part of last month fluctuated considerably with a pronounced tendency toward recession at its close. The general disposition on the part of rubber manufacturers is and has been to confine their purchases to the minimum of necessity, a significant indication of the weakness characterizing the latter part of the month on upriver fine is the decline from \$1.50 to \$1.12. In the opinion of many in close touch with the market, a revival of the prices of 1910 did not seem unlikely, which in itself has been an unsettling factor mitigating against extensive operation on the part of buyers.

It is hoped by operators that the recent weakness will be followed by a favorable reaction and that a natural, healthy demand by the more important buyers will soon create an upward tendency.

NEW YORK QUOTATIONS.

FOLLOWING are the quotations at New York for Pará grades, one year ago, one month ago, and April 29—the current date:

PARÁ.	May 1, '10.	April 1, '11.	April 29, '11
Islands, fine, new.....	275a 277	130a 131	118a 120
Islands, fine, old.....	none here	none here	120@ 121
Upriver, fine, new.....	281a 282	139a 140	126@ 127
Upriver, fine, old.....	none here	144@ 145	130@ 131
Islands, coarse, new.....	109a 110	62@ 63	61@ 62
Islands, coarse, old.....	none here	none here	none here
Upriver, coarse, new.....	182a 185	108a 109	89a 90
Upriver, coarse, old.....	none here	110@ 111	92@ 93
Cameté.....	126@ 127	79@ 80	75@ 76
Caucho (Peruvian), ball.....	180@ 182	108@ 109	94@ 95
Caucho (Peruvian), sheet.....	none here	none here	none here

PLANTATION PARÁ.

Fine smoked sheet.....	285a 288	159@ 160	140@ 141
Fine pale crepe.....	@...	145@ 146	140@ 141
Fine sheets and biscuits.....	@...	142@ 143	130@ 131

CENTRALS.

Esmeralda, sausage.....	170@ 172	105@ 106	88@ 89
Guayaquil, strip.....	130a 135	none here	none here
Nicaragua, scrap.....	167a 168	103a 104	87a 88
Panama.....	none here	none here	none here
Mexican, scrap.....	170@ 172	103@ 104	86@ 87
Mexican, slab.....	none here	62@ 63	none here
Mangabeira, sheet.....	none here	68@ 69	none here
Guayule.....	110a 110	64@ 65	58@ 59
Balata, sheet.....	@...	93@...	83@ 84
Balata, block.....	@...	67@ 68	56@ 57

AFRICAN.

Lopori, ball, prime.....	none here	123@ 124	115@ 118
Lopori, strip, prime.....	none here	none here	none here
Aruwimi.....	none here	122@ 123	112@ 113
Upper Congo, ball, red.....	190@ 191	125@ 126	109@ 110
Ikelemba.....	none here	none here	none here
Sierra Leone, 1st quality.....	188@ 190	122@ 123	100@ 102
Massai, red.....	188@ 190	122@ 123	100@ 102
Soudan niggers.....	none here	none here	none here
Cameroon, ball.....	128@ 130	79@ 80	76@ 77
Benguella.....	none here	79@ 80	70@ 71
Madagascar, pinky.....	125@ 126	100@ 101	87@ 88
Accra flake.....	40a 42	40a 41	38a 39

EAST INDIES.

Assam.....	none here	104@ 105	none here
Sumatra.....	9 1/2 @ 10 1/2	7 1/2 @ 7 1/4	6 1/2 @ 6 1/4
Borneo.....	none here	none here	none here

Late Pará cables quote:

	Per Kilo.		Per Kilo.
Islands, fine.....	58500	Upriver, fine.....	6\$000
Islands, coarse.....	58000	Upriver, coarse.....	3\$500
Exchange.....		Exchange.....	16 1/2 @

Latest Manáos advices:

Upriver, fine.....	6\$200	Exchange.....	16 1/2 @
Upriver, coarse.....	3\$700		

Statistics of Para Rubber (Excluding Caucho).

NEW YORK.

	Fine and Medium.	Coarse.	Total 1911.	Total 1910.	Total 1909.
Stocks, February 28.....tons	134	31 =	165	186	385
Arrivals, March.....	652	402 =	1,054	3,211	2,068
Aggregating.....	786	433 =	1,219	3,397	2,453
Deliveries, March.....	468	355 =	823	3,117	2,002
Stocks, March 31.....	318	78 =	396	280	451

	PARÁ.			ENGLAND.		
	1911.	1910.	1909.	1911.	1910.	1909.
Stocks, February 28, tons	3,245	465	1,710	1,385	510	420
Arrivals, March.....	2,955	3,890	2,980	1,594	632	1,912
Aggregating.....	6,200	4,355	4,690	2,979	1,142	2,332
Deliveries, March.....	2,570	3,520	3,129	1,114	602	2,002
Stocks, March 31.....	3,630	835	1,561	1,865	540	330

	1911.	1910.	1909.
World's visible supply, March 31.....tons	7,144	3,737	4,264
Pará receipts, July 1 to March 31.....	24,670	26,895	25,320
Pará receipts of caucho, same dates.....	4,720	5,215	5,290
Afloat from Pará to United States, Mar. 31	183	117	405
Afloat from Pará to Europe, March 31.....	1,070	1,965	1,310

Amsterdam.

F. JOOSTEN reports [April 18]:

Our next tender sale will take place on May 3, and will include about 14,200 kilos, of which about 3,980 kilos is *Hevea*, 8,500 kilos *Ficus*, 800 kilos *Castilloa* and 920 kilos *Sumatra*. Since our last sale only a moderate business took place, some old parcels of *Hevea* sheets and *Sumatra Ficus* being disposed of as well as some new arrivals of rooty Madagascan.

Rubber Scrap Prices.

LATE NEW YORK quotations—prices paid by consumers for car-load lots, per pounds—are practically unchanged as follows:

	April 1.	May 1.
Old rubber boots and shoes—domestic..	9 1/2 @ 9 5/8	9 1/2 @ 9 5/8
Old rubber boots and shoe—foreign..	8 3/4 @ 9	9 @ 9 1/8
Pneumatic bicycle tires.....	4 1/2 @ 4 3/4	4 1/2 @ 4 3/4
Automobile tires.....	8 1/8 @ 8 1/2	8 1/2 @ 8 1/8
Solid rubber wagon and carriage tires	8 1/2 @ 9	8 1/2 @ 9
White trimmed rubber.....	11 @ 11 1/2	11 @ 11 1/2
Heavy black rubber.....	4 3/4 @ 5 1/4	4 3/4 @ 5 1/4
Air brake hose.....	4 3/4 @ 5	4 3/4 @ 5
Garden hose.....	2 @ 2 1/4	2 @ 2 1/4
Fire and large hose.....	2 1/2 @ 2 3/4	2 1/2 @ 2 3/4
Matting.....	1 @ 1 1/8	1 @ 1 1/8

Antwerp.

RUBBER STATISTICS FOR MARCH

From—	1911.	1910.	1909.	1908.	1907.
Stocks, February 28....kilos	539,207	516,534	331,433	907,104	603,861
Arrivals in March.....	483,396	263,188	544,126	692,398	416,734
Congo sorts	365,463	174,167	410,838	587,972	358,496
Other sorts	117,933	89,021	133,288	104,426	58,238
Aggregating	1,022,603	779,722	875,559	1,599,502	1,020,595
Sales in March.....	376,989	280,620	279,704	462,610	295,057
Stocks, March 31.....	645,614	499,102	595,855	1,136,892	725,538
Arrivals since January 1..	1,269,668	1,039,679	1,128,092	1,517,809	1,332,758
Congo sorts	940,962	830,830	781,387	1,347,423	1,151,165
Other sorts	328,706	208,849	346,705	170,386	181,593
Sales since January 1....	1,212,266	1,082,089	1,127,972	1,387,811	1,265,404

RUBBER ARRIVALS FROM THE CONGO.

MARCH 31.—By the steamer <i>Elisabethville</i> :		
Bunge & Co.	(Société Générale Africaine) kilos	69,300
Do	(Comptoir Commercial Congolais)	28,500
Do	(Chemins de fer-Grands Lacs)	2,300
Do	(Compagnie des Hauts-Fourneaux de Kasai)	100,400
L. & W. Van de Velde ..	(Société Comm. and Financ. Africaine)	2,500
Do		5,300
Willett frères		1,500
M. S. Cols		750
Cassart & Henrion		500
Edmond & Van Steensel ..		1,250
		212,300

New York.

IN regard to the financial situation, Albert B. Beers (broker in crude rubber and commercial paper, No. 68 William street, New York), advises as follows: "During April there has been a good demand for commercial paper, both by city banks and out of town, the best rubber names ruling at 4 @ 4½ per cent., and those not so well known 5 @ 5½ per cent.

NEW YORK PRICES FOR MARCH (NEW RUBBER).

	1911.	1910.	1909.
Upriver, fine	\$1.45@1.66	\$2.09@2.58	\$1.22@1.26
Upriver, coarse	1.08@1.18	1.30@1.70	.93@ .97
Islands, fine	1.30@1.56	2.03@2.45	1.18@1.21
Islands, coarse .....	.62@ .90	.90@1.07	.55@ .61
Cametá .....	.79@ .92	.95@1.28	.63@ .67

African Rubbers.

NEW YORK STOCKS (IN TONS).

March 1, 1910.....	161	October 1, 1910.....	375
April 1	121	November 1	100
May 1	125	December 1	140
June 1	90	January 1, 1911.....	115
July 1	120	February 1	115
August 1	250	March 1	111
September 1	300	April 1	98

Rubber Receipts at Manaos.

DURING February and eight months of the crop season, for three years (courtesy of Messrs. Scholz & Co.):

	FEBRUARY	JULY-FEBRUARY			
FROM—	1911.	1910.	1909.	1910-11.	1909-10.
Rio Para-Açu	2,151	1,419	1,535	7,844	7,489
Rio Madeira	511	274	330	2,472	3,698
Rio Juruá	570	755	511	2,688	3,132
Rio Javary-Iquitos	289	288	342	1,939	2,469
Rio Solimões	8	85	196	1,016	973
Rio Negro	142	144	119	241	349
Total	3,735	2,937	2,943	16,300	17,300
Caucho	649	719	1,015	2,908	3,959
Total	4,384	3,656	3,958	19,108	21,179
Manaos	2,321	2,412	2,660	13,088	15,809
Pará	2,063	1,240	1,298	6,020	5,370
Total	4,384	3,656	3,958	19,108	21,179

Para.

R. O. AHLERS & Co. report [April 6]:

The market oscillated slightly in accordance with reports from consuming centers. There are different rumors current about a *carton* between the state of Amazonas and Pará concerning valorization, that a bank may be founded for that purpose with a capital of £6,000,000 [= \$29,199,000]; that a loan of £4,000,000 [= \$19,466,000] will be negotiated in London; and finally that the Banco do Brazil or the federal government may take over the 3,000 tons of the syndicate, keeping them out of the market and going on buying rubber. Which of these rumors deserves any credit remains to be seen.

Plantation Rubber From the Far East.

EXPORTS OF CEYLON GROWN RUBBER

[From January 1 to March 13, 1910 and 1911. Compiled by the Ceylon Chamber of Commerce.]

	1910.	1911.
To Great Britain.....pounds	261,430	617,600
To United States.....	227,570	366,743
To Belgium	1,598	67,398
To Japan		11,953
To Canada	1,911	9,971
To Australia		7,967
To Germany	6,683	6,282
To Holland		100
To India		40
To Italy	452	
Total	499,644	1,088,054

[Same period 1909—216,153 pounds; same 1908—139,048.]

TOTAL EXPORTS FROM MALAYA.

[From January 1 to dates named. Reported by Barlow & Co., Singapore. These figures include the production of the Federated Malay States, but not of Ceylon.]

FROM—	1909.	1910.	1911.
Singapore (to March 2)....pounds	519,576	581,467	1,141,574
Penang (Feb. 19).....	496,971	330,267	467,040
Port Swettenham (Feb. 17).....		1,022,562	1,995,674
Total	1,016,547	1,934,296	3,604,288

Liverpool.

WILLIAM WRIGHT & Co. report [April 1]:

Fine Pará.—The market has been subject to violent speculative manipulation, mainly, we think, intended to break the syndicate in Brazil. Latest information, however, is to the effect that the federal government in Brazil has come to the aid of the syndicate and presumably other receivers. The crop is said to be 10 per cent. short. We think America would buy if they could get a good line offered, and there is a considerable short interest in the market, so that at present everything points to a further advance, and it looks like being a pretty sharp one. Closing value.—Upriver 6s. 2d. [= \$1.50].

IMPORTS FROM PARA AT NEW YORK.

The Figures Indicate Weight in Pounds.

MARCH 27.—By the steamer *Cearense*, from Manáos and Pará:

	Fine.	Medium.	Coarse.	Caucho.	Total.
New York Commercial Co.	52,700	3,200			55,900
Poel & Arnold	6,400	25,400	19,800		51,600
A. T. Morse & Co.	7,800	2,500	19,800	700	30,800
Henderson & Korn	900	300	8,600	200	10,000
L. Johnson & Co.	6,000				6,000
Total	73,800	31,400	48,200	900	154,300

APRIL 11.—By the steamer *Minas Geraes*, from Pará:

A. T. Morse & Co.	56,400		48,200	13,900	117,500
Poel & Arnold	5,000	700	32,300		38,000
Total	61,400	700	80,500	13,900	155,500

APRIL 16.—By the steamer *Boniface*, from Manáos and Pará:

Poel & Arnold	10,700	13,200	86,500	9,400	119,800
A. T. Morse & Co.	15,000	1,400	3,300	52,200	71,900
Henderson & Korn	18,500	1,300	27,700	1,800	49,300
H. V. Astlett	14,700	700	4,600		20,000
De Lagotellerie & Co.			21,100		21,100
Hagemeyer & Brunn	4,600		2,700		7,300
Total	63,500	16,600	145,900	63,400	289,400

APRIL 22.—By the steamer *Dominic*, from Manáos and Pará:

Poel & Arnold	43,500	2,300	104,000	80,000	229,800
New York Commercial Co.	76,400	20,400	32,300	20,700	149,800
A. T. Morse & Co.			11,400	66,200	77,600
Henderson & Korn	16,100	4,200	25,500		45,800
De Lagotellerie & Co.			39,600		39,600
Hagemeyer & Brunn			21,100		21,100
Total	136,000	26,900	233,900	166,900	563,700

APRIL 24.—By the steamer *Clement*, from Manáos and Pará:

August Belmont & Co.	210,200	88,100	70,200	10,700	379,200
Poel & Arnold	68,800		70,600	25,100	164,500
A. T. Morse & Co.	58,500	8,300	4,600	69,900	141,300
New York Commercial Co.	3,300	300	2,700	24,400	30,700
Laurence Johnson & Co. ..	31,800		1,900		33,700
Total	372,600	96,700	150,000	130,100	749,400

PARA RUBBER VIA EUROPE.

		POUNDS
MARCH 27.—By the <i>Canada</i> =Liverpool:		
Robinson & Co. (Fine).....	15,000	
MARCH 28.—By the <i>Canada</i> =Liverpool:		
Raw Products Co. (Fine).....	2,000	
N. Y. Commercial Co. (Coarse).....	4,000	
MARCH 30.—By the <i>Canada</i> =Liverpool:		
H. A. Astlett (Fine).....	5,000	
H. A. Astlett (Caucho).....	6,000	
W. R. Grace & Co. (Fine).....	3,500	
F. Rosenstern & Co. (Fine).....	2,500	20,500
APRIL 3.—By the <i>Canada</i> =Liverpool:		
Robinson & Co. (Fine).....	13,500	
Poel & Arnold (Caucho).....	22,500	36,000
APRIL 3.—By the <i>Minnetonka</i> =London:		
General Rubber Co. (Coarse).....	33,000	
APRIL 5.—By the <i>Canada</i> =Liverpool:		
Poel & Arnold (Caucho).....	22,500	
APRIL 7.—By the <i>Canada</i> =Liverpool:		
N. Y. Commercial Co. (Fine).....	11,000	
Henry A. Gould Co. (Fine).....	8,000	
Wallace L. Gough Co. (Fine).....	7,000	
Raw Products Co. (Coarse).....	7,000	
Henderson & Korn (Caucho).....	11,000	44,000
APRIL 19.—By the <i>Carmania</i> =Liverpool:		
Robinson & Co. (Fine).....	8,000	

OTHER NEW YORK ARRIVALS.

CENTRALS.

[This sign, in connection with imports of Centrals, denotes Guayule rubber.]

		POUNDS.
MARCH 27.—By the <i>Canada</i> =Colon:		
G. Amsinck & Co.....	17,000	
New York Commercial Co.....	3,500	
Laurence Johnson & Co.....	2,500	
Mecke & Co.....	1,500	
Jose Julia & Co.....	1,500	24,000
MARCH 27.—By the <i>Comus</i> =New Orleans:		
Manhattan Rubber Manufacturing Co.....	4,500	
A. T. Morse & Co.....	1,500	
G. Amsinck & Co.....	1,500	7,500
MARCH 28.—By the <i>El Sol</i> =Galveston:		
Continental-Mexican Rubber Co.....	*155,000	
Charles T. Wilson.....	*27,000	
For Canada.....	*10,000	*192,000
MARCH 30.—By the <i>Amerika</i> =Hamburg:		
Raw Products Co.....	*9,000	
MARCH 28.—By the <i>Oruba</i> =Colon:		
G. Amsinck & Co.....	7,000	
W. R. Grace & Co.....	7,000	
Isaac Brandon & Bros.....	5,500	
J. Sambrada & Co.....	1,500	21,000
MARCH 28.—By the <i>Prinz Eitel Friedrich</i> =Columbia:		
Kunhardt & Co.....	8,000	
Maitland, Coppell & Co.....	2,500	
Pablo Calvet & Co.....	2,500	
A. Held.....	2,500	
For London.....	3,500	19,000
MARCH 30.—By the <i>Bayamo</i> =Tampico:		
Ed. Maurer.....	*155,000	
New York Commercial Co.....	85,000	
Poel & Arnold.....	65,000	
For Europe.....	50,000	355,000
MARCH 31.—By the <i>Mexico</i> =Frontera:		
E. Nelson Tibbals & Co.....	13,000	
Harburger & Stack.....	9,000	
Mexican Products Co.....	6,000	
W. L. Wadleigh.....	5,000	
General Export Co.....	5,500	
A. T. Morse & Co.....	2,000	
E. Steiger & Co.....	2,000	
H. Marquardt & Co.....	2,000	
Isaac Kubie Co.....	1,500	46,000
APRIL 1.—By the <i>Romney</i> =Bahia:		
J. H. Rossbach & Bros.....	50,000	
APRIL 3.—By the <i>Seguranca</i> =Tampico:		
Ed. Maurer.....	*115,000	
New York Commercial Co.....	*69,000	*184,000
APRIL 3.—By the <i>Advance</i> =Colon:		
G. Amsinck & Co.....	12,000	
American Trading Co.....	3,500	
Mecke & Co.....	1,500	
Jose Julia & Co.....	1,000	18,000
APRIL 3.—By the <i>Baltic</i> =Liverpool:		
Rubber Import Co.....	15,000	

APRIL 3.—By the <i>Comus</i> =New Orleans:		
A. T. Morse & Co.....	6,000	
Eggers & Heinlein.....	1,000	
New York Commercial Co.....	1,000	8,000
APRIL 5.—By the <i>Kaiserin Auguste Victoria</i> =Colon:		
G. Amsinck & Co.....	6,000	
Pablo Calvet & Co.....	3,000	
Wessels Kulenkampf & Co.....	1,000	
Gillespie Bros. & Co.....	1,000	
A. M. Capen's Sons.....	1,000	19,500
APRIL 5.—By the <i>Pretoria</i> =Hamburg:		
James T. Johnstone.....	*11,000	
APRIL 6.—By the <i>Panama</i> =Colon:		
George A. Alden & Co.....	3,000	
Piza, Nephews & Co.....	2,000	5,000
APRIL 7.—By the <i>Antilles</i> =New Orleans:		
Eggers & Heinlein.....	2,500	
Manhattan Rubber Manufacturing Co.....	2,000	
New York Commercial Co.....	1,000	5,500
APRIL 7.—By the <i>El Alba</i> =Galveston:		
Continental-Mexican Rubber Co.....	*35,000	
Charles T. Wilson.....	*15,000	*50,000
APRIL 8.—By the <i>Madagascar</i> =Hamburg:		
Harburger & Stack.....	5,000	
E. Nelson Tibbals & Co.....	2,500	
International Products Co.....	1,500	
T. W. Wilson & Co.....	1,000	
For Europe.....	6,000	16,000
APRIL 8.—By the <i>Hawaiian</i> =Mexico:		
American Trading Co.....	20,000	
APRIL 10.—By the <i>Caronia</i> =Liverpool:		
Rubber Import Co.....	22,500	
APRIL 10.—By the <i>El Oriente</i> =Galveston:		
Continental-Mexican Rubber Co.....	*80,000	
APRIL 10.—By the <i>Matanzas</i> =Tampico:		
Ed. Maurer.....	*175,000	
New York Commercial Co.....	*110,000	*285,000
APRIL 12.—By the <i>El Cid</i> =Galveston:		
Continental-Mexican Rubber Co.....	*45,000	
Charles T. Wilson.....	*10,000	*55,000
APRIL 12.—By the <i>Comus</i> =New Orleans:		
A. T. Morse & Co.....	3,500	
Eggers & Heinlein.....	3,000	
A. N. Rotholz.....	2,500	9,000
APRIL 12.—By the <i>Prinz Sigismund</i> =Columbia:		
Kunhardt & Co.....	10,000	
Caballero & Blanco.....	10,000	
A. Held.....	6,500	
Maitland, Coppell & Co.....	4,500	
De Sola Bros. & Pardo.....	5,500	
Pablo Calvet & Co.....	2,000	
C. Amsinck & Co.....	2,000	
Heilbron Wolff & Co.....	1,000	41,500
APRIL 12.—By the <i>Magdalen</i> =Colon:		
G. Amsinck & Co.....	12,000	
Jose Julia & Co.....	6,500	
Isaac Brandon & Bros.....	7,000	
Roldau & Van Sickle.....	4,500	
General Rubber Co.....	4,000	
A. M. Capen's Sons.....	3,500	
Mecke & Co.....	2,500	
Dumarest Bros. & Co.....	2,000	
A. T. Morse & Co.....	1,500	
Gillespie Bros. & Co.....	1,000	
B. Williamson Co.....	1,000	45,500
APRIL 15.—By the <i>El Rio</i> =Galveston:		
Continental-Mexican Rubber Co.....	*110,000	
APRIL 15.—By the <i>Merida</i> =Frontera:		
H. Marquardt & Co.....	6,500	
E. Steiger & Co.....	5,000	
Harburger & Stack.....	3,500	
W. Peterson Co.....	1,500	
A. Klipstein & Co.....	1,500	
International Products Co.....	1,500	
Mecke & Co.....	1,000	
Herman & Klugge.....	1,000	21,500
APRIL 17.—By the <i>Ancon</i> =Colon:		
New York Commercial Co.....	5,500	
G. Amsinck & Co.....	3,500	
Laurence Johnson & Co.....	2,500	11,500
APRIL 17.—By the <i>Vigilancia</i> =Tampico:		
New York Commercial Co.....	*100,000	
Ed. Maurer.....	*155,000	
Poel & Arnold.....	*30,000	
For Europe.....	*80,000	*365,000
APRIL 17.—By the <i>President Grant</i> =Hamburg:		
A. T. Morse & Co.....	*18,000	
APRIL 18.—By the <i>Calderon</i> =Bahia:		
Adolph Hirsch & Co.....	9,000	

APRIL 18.—By the <i>El Sol</i> =Galveston:		
Continental-Mexican Rubber Co.....	*90,000	
APRIL 21.—By the <i>El Valle</i> =Galveston:		
Isaac Brandon & Bros.....	2,500	
Graham Hinkley & Co.....	1,500	
Suzarte & Whitney.....	1,500	
A. Rosenthal & Sons.....	1,000	
Gillespie Bros. & Co.....	1,000	7,500
APRIL 21.—By the <i>El Valle</i> =Galveston:		
Continental-Mexican Rubber Co.....	*80,000	
APRIL 22.—By the <i>Asiatic</i> =Bahia:		
J. H. Rossbach & Bros.....	25,000	
APRIL 22.—By the <i>Monterey</i> =Frontera:		
E. Nelson Tibbals Co.....	9,000	
Laurence Import Co.....	8,500	
E. Steiger & Co.....	4,500	
International Products Co.....	3,000	
Harburger & Stack.....	2,000	
Herman & Klugge.....	1,500	
General Export and Commission Co.....	1,500	
Mecke & Co.....	1,500	
W. L. Wadleigh.....	1,500	
MARCH 30.—By the <i>St. Paul</i> =London:		
A. T. Morse & Co.....	30,000	
General Rubber Co.....	56,000	
George A. Alden & Co.....	35,000	
Robinson & Co.....	13,500	
Raw Products Co.....	4,500	
James T. Johnstone.....	6,500	
Poel & Arnold.....	22,500	138,000
APRIL 5.—By the <i>Finland</i> =Antwerp:		
George A. Alden & Co.....	45,000	
Poel & Arnold.....	2,000	47,500
APRIL 5.—By the <i>Pretoria</i> =Hamburg:		
A. T. Morse & Co.....	38,000	
James T. Johnstone.....	11,500	
George A. Alden & Co.....	11,500	
Wallace L. Gough & Co.....	11,000	
Levesey & Co.....	7,000	
Rubber Trading Co.....	6,500	85,500
APRIL 10.—By the <i>Carmania</i> =Liverpool:		
Poel & Arnold.....	70,000	
Henderson & Korn.....	11,500	81,500
APRIL 10.—By the <i>Kaiserin Auguste Victoria</i> =Hamburg:		
Poel & Arnold.....	22,500	
A. T. Morse & Co.....	19,000	
George A. Alden & Co.....	13,500	
James T. Johnstone.....	7,000	62,000
APRIL 10.—By the <i>Philadelphia</i> =London:		
A. T. Morse & Co.....	11,000	
Poel & Arnold.....	13,500	24,500
AFRICAN.		
MARCH 7.—By the <i>Campana</i> =Liverpool:		
George A. Alden & Co.....	22,500	
MARCH 17.—By the <i>Manzanilla</i> =London:		
George A. Alden & Co.....	9,000	
MARCH 28.—By the <i>El Estero</i> =Antwerp:		
A. T. Morse & Co.....	40,000	
Livesey & Co.....	20,000	
Poel & Arnold.....	22,500	82,500
MARCH 28.—By the <i>Amerika</i> =Hamburg:		
Poel & Arnold.....	38,000	
A. T. Morse & Co.....	25,000	
George A. Alden & Co.....	19,000	
Livesey & Co.....	21,000	
Raw Products Co.....	3,500	106,500
MARCH 30.—By the <i>Canada</i> =Liverpool:		
A. T. Morse & Co.....	34,000	
Poel & Arnold.....	134,000	
George A. Alden & Co.....	2,500	
James T. Johnstone.....	2,500	172,000
MARCH 30.—By the <i>Chicago</i> =Havre:		
Poel & Arnold.....	9,000	
MARCH 30.—By the <i>St. Paul</i> =London:		
A. T. Morse & Co.....	30,000	
George A. Alden & Co.....	25,000	55,000
APRIL 3.—By the <i>Baltic</i> =Liverpool:		
General Rubber Co.....	56,000	
George A. Alden & Co.....	35,000	
Robinson & Co.....	13,500	
Raw Products Co.....	4,500	
James T. Johnstone.....	6,500	
Poel & Arnold.....	22,500	138,000
APRIL 5.—By the <i>Finland</i> =Antwerp:		
George A. Alden & Co.....	45,000	
Poel & Arnold.....	2,500	47,500
APRIL 5.—By the <i>Pretoria</i> =Hamburg:		
A. T. Morse & Co.....	38,000	
James T. Johnstone.....	11,500	
George A. Alden & Co.....	11,500	
Wallace L. Gough & Co.....	11,000	
Levesey & Co.....	7,000	
Rubber Trading Co.....	6,500	85,500

NEW YORK.					EUROPE.						
EXPORTERS.	Fine.	Medium.	Coarse.	Caucho.	TOTAL.	Fine.	Medium.	Coarse.	Caucho.	TOTAL.	TOTAL.
Gruner & Co.....	54,294				185,710	93,753	12,256	31,769	72,457	210,235	395,945
E. Pinto Alves & Co.....	42,730	3,680	137,202	2,165	185,777	109,199	19,397	32,441	39,441	200,478	386,525
Suarez Hermanos & Co., Ltd.....						187,013	2,514	6,072	7,080	202,679	202,679
Scholz, Hartje & Co.....	13,430	1,700	10,890	660	26,680	60,198	5,528	37,186	22,440	125,352	152,032
Adelbert H. Alden, Ltd.....	12,070	1,020	23,084	14,190	50,364	40,023	4,550	26,458	13,530	84,561	134,925
Mello & Co.....			10,162	1,125	11,287	73,277	16,773	4,436	27,840	122,326	133,613
Gordon & Co.....						15,358	3,320	9,222	24,646	52,546	52,546
R. O. Ahlers & Co.....			7,219	17,315	24,534	4,467	.....	.....	1,025	5,492	30,026
Pires Teixeira & Co.....	7,820		7,590		15,410	11,050	.....	3,300	.....	14,350	29,760
J. Marques.....						6,788	1,519	2,197	.....	10,504	10,504
A. de La Riviere & Co.....						5,780	.....	1,650	.....	7,430	7,430
Guilherme Aug. de Miranda Filho..	960	640			1,600				.....		1,600
Sundries.....						2,979	304	1,455	.....	4,738	4,738
Itacoatiara, direct.....						4,620	1,017	3,440	800	9,877	9,877
Manãos, direct.....	330,819	90,426	157,432	61,834	640,511	741,780	122,658	124,953	288,288	1,277,679	1,918,190
Quitos, direct.....						121,519	11,697	45,602	111,048	289,866	289,866
Total, February, 1911.....	462,123	111,594	454,235	113,921	1,141,873	1,477,804	201,333	330,181	608,595	2,618,113	3,759,986
Total, January, 1911.....	728,494	157,522	563,542	245,226	1,694,784	884,484	117,265	123,838	287,438	1,413,025	3,107,809

RWRITERS' SPECIFICATIONS

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INDIA RUBBER WORLD

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Edited by HENRY C. PEARSON—Offices, No. 15 West 38th Street, NEW YORK.

Vol. XLIV. No. 3.

JUNE 1, 1911.

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Published on the 1st of each Month by

THE INDIA RUBBER PUBLISHING CO.

No. 15 West 38th Street, New York.

CABLE ADDRESS: IRWORLD, NEW YORK.

HENRY C. PEARSON, Editor

Vol. 44.

JUNE 1, 1911.

No. 3.

SUBSCRIPTIONS: \$3.00 per year, \$1.75 for six months, postpaid, for the United States and dependencies and Mexico. To the Dominion of Canada and all other countries, \$3.50 (or equivalent funds) per year, postpaid.

ADVERTISING: Rates will be made known on application.

REMITTANCES: Should always be made by bank or draft, Postoffice or Express money orders on New York, payable to THE INDIA RUBBER PUBLISHING COMPANY. Remittances for foreign subscriptions should be sent by International Postal Order, payable as above.

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Entered at New York postoffice as mail matter of the second class.

TABLE OF CONTENTS ON LAST PAGE OF READING.

BRAZIL AND VALORIZATION.

IT HAS been held by financiers from the beginning that Brazil's valorization of coffee was economically unsound. It was also predicted that other interests, sugar, cacao, perhaps Brazil nuts, and certainly rubber, would sometime insist upon the same government assistance. In one of these items the prophets seem to have been right. The secret syndicate that gathered in several thousand tons of rubber is a matter of history. So is the part that the Banco de Brazil took in the matter. The fact that the holders of the rubber were not able to raise the price and that it fell materially in spite of their manipulation, has placed them in an exceedingly awkward position. To extricate themselves the government of Pará is said to have passed the following propositions:

"First: Loan \$30,000,000, 10 years, 5 per cent. interest. Guaranteed by tax 400 reis.

"Second: Guarantee privilege individuals or concerns engaged cleaning, washing, refining rubber.

"Third: Open agricultural bank, capital up to \$15,000,000. Pará State guaranteeing 6 per cent. interest."

It will be noted that the first of these puts a supertax on rubber of 400 reis per kilogram, equal to a trifle over 5 cents a pound.

Brazilian rubber is already burdened by too large an export tax. More than any other thing it is this tax that keeps outside capital from planting up the vast fertile country in and about Pará to *Hevea Brasiliensis*.

The second proposition for washing rubber at Pará and Manáos has often been mooted. It would, of course, save something in freight but it would not save anything to the rubber manufacturer for the reason that the *concessionaire* would expect to make a good thing of it and be obliged to share it with the government. The time to wash rubber is before it is coagulated, just as the planters in the Far East do. That process then becomes a part of coagulation. There is great danger that rubber washed and sheeted in either of the centers named will be held up as a manufactured product by the customs officials in the United States, Germany, France, Russia and Belgium, and be very heavily taxed. The fact that the rubber manufacturer gets no advantage from this washing, that it is not done to standardize the rubber but simply to raise revenue, and that it is going to be a great cause of trouble, is bound to make every manufacturer in the world more than ever bitter against the great Brazilian crude rubber producers, which is a pity.

Propositions of the same sort have been made and it is said passed in Manáos. It is probable that none of the plans for raising money on bonds from either Pará or Amazonas will go through without the backing of the Federal government. Although Brazil is a heavy borrower it is said that England, for example, would absorb the bonds thus backed.

A MULTIPLICATION OF ELASTICITY IN INDIA-RUBBER.

PROLOGUE.

THE man of solid common sense, the unvaryingly matter-of-fact individual is, of course, the bulwark of the nation, the sturdy wheel horse of industry. He is never an inventive, imaginative, creative genius, nor can he abandon the ruts of accepted experience and hew new roads of his own. To the common-sense man, the creative type, is flighty, his ideas are wild, his deeds grudgingly acknowledged. All this is but a preliminary, designed to muzzle the unimaginative reader ere he condemn the somewhat startling suggestions that follow.

ARGUMENT.

Saccharin, which may be termed for the sake of this argument synthetic sugar, has 500 times the sweetening power of commercial sugar. It is a chemical product and if the pure food laws were favorable would revolutionize a score of industries that are today the greatest users of cane and beet sugar.

THE CASE SUPPOSITIOUS.

Chemists and experimenters are constantly essaying the production of synthetic rubber "equal to the best Upriver fine." Why not produce a colloid that is infinitely superior to Pará? Produce a colloidal parallel for saccharin. Granting that a pound of Pará will easily assimilate a pound of carbonate of lime and still be strong, resilient and durable, let the chemist evolve a substance a pound of which will assimilate 500 pounds of adulterant and be equal to the Pará compound. It does not matter what the cost of the base from which it is made or how rare the ingredients employed, the substance will be so valuable that at \$300 a pound it will be a better purchase than Pará at \$1. It would be by far the most valuable product used in the arts. Instead of tons of crude the great companies could get along with pounds, the little ones with ounces. A small manufacturer could bring in his week's supply in his coat-tail pockets, and use his safe for a drying room. More valuable than gold, pound for pound, infinitely more useful in the arts, it would make itself the medium of exchange and put that heavy and actually useless metal down with lead, where it belongs.

Navy specifications would sternly call for not less than 1,000 per cent. of synthetic Pará, and a thousandth of a grain less would bring about rejection of the goods.

It would be sold by photograph, and sworn analysis rather than by sample and shipped in bullion chests guarded by Pinkerton detectives. Special armed guards would be necessary in every factory grinding room. Steel vaults with time locks would be its storehouse.

All that and much more at \$300 a pound. But suppose it were put on the market at \$3 a pound. No one can comprehend the industrial revolution that would follow. Rubber roads would stretch from city to city and rubber tires would be unnecessary. Cattle would no longer be slaughtered for their hides for rubber leather would be so much better and cheaper that shoe, trunk and harness manufacturers could not afford to use anything else. Iron, lumber and paper would have to reckon with a rival so cheap, so adaptable, so easily worked that they would have the greatest difficulty in competing.

There is, to be sure, no indication that such a dis-

covery is imminent. Indeed, "just as good as fine" is not yet accomplished. But who can say what will eventuate if only the right effort is put forth. Aiming at something much better than Pará might bring about a product at least equal to it. Not failure but low aim applies.

With apologies.

Work calmly in thy rubber mill,
Oh, thou, whoe'er thou art;
And let no wild synthetic dreams
Oppress thy fearful heart.

MECHANICAL TAPPERS AND GATHERERS.

THE late J. B. Carruthers when at the head of the Botanical Gardens in Trinidad, expressed himself as doubtful of the possibility of planters of *Hevea* anywhere in the Americas competing with those in the Far East. He acknowledged that everything in the way of climate, soil and moisture was ideal in the Guianas, for example, but the labor cost seemed to him an insurmountable obstacle. That is to say, 15 cents a day as against 40 cents for a coolie was enough to make a marvelously profitable business in Malaya unprofitable in Guiana. Were Para rubber to drop to 50 cents a pound and stay there, it doubtless would cause those who are considering planting in the Americas to pause, but such an eventuality is hardly possible for years to come, at least. Plantation Para costs in the Far East, say 25 cents a pound. In the Guianas it may cost 35 cents, perhaps 40 cents, but even at that it will be a marvelously profitable crop.

Then, again, it must be remembered that labor costs in the East are gradually going up. It is not improbable that with the enormous expansion in planting in Ceylon the Federated Malay States, Java, Sumatra, Borneo, etc., labor will become scarcer and wage scales appreciate considerably. Then, too, there is the mechanical faculty of the American planter to be taken into account. It is by no means thinkable that the last word has been said upon methods of tapping, gathering and coagulating. With trees set in orderly rows equally distant one from another, who can say that it is impossible to operate mechanical tappers and gatherers that will do the work of hundreds of coolies? When the Yankee gets too far behind in the race for any sort of supremacy, he is likely to discover some short cut that lands him at the goal with the rest. He certainly is far behind in the production of systems of tapping and gathering now. Nearly all of the successful ones are of English origin, and are the result of much labor and experiment. To better them is to possess and utilize genuine mechanical genius.

THEATRES OR EXPERIMENT STATIONS?

A MEXICAN friend draws our attention to a magnificent theater building by his government costing \$8,000,000, with probably the most elaborate and costly piece of glass tapestry ever produced. Americans, English and Germans have invested somewhere about 20,000,000 of dollars in *Castilloa* and guayule in Mexico. For a tithe of \$8,000,000 two or three experiment stations could have been established, and scores of the vexatious problems that the planters and extractors have wrestled with alone, could have been solved scientifically and quickly. Such action on the part of the Mexican government would not only result in profit to the country, but would attract more capital, keep more laborers employed. The *Castilloa* is indigenous in Mexico. There are many varieties of this interesting tree—the *elastica*, *Markhamiana*, *tunu*, *Ulei*, etc., etc. The privilege, nay, the duty, of the Mexican government was to experiment with every one of these. To find the best for cultivation and advise and help planters. To study tapping and coagulation and point the best way. Then, too, with guayule (*Parthenium argentatum*) the problem of its propagation, and, indeed, of its extraction belonged to a government agricultural board. We are very friendly to Mexico. She has been good to many Americans, but \$8,000,000 of government money for a theater and nothing for rubber is unfortunate. Perhaps, however, the experiment stations are yet to come.

LISTEN TO THE RUBBER BAND.

PUT your ear to the ground and listen to the insistent demand of wholesaler and retailer for lower priced goods. Crude rubber dropped to \$1.12, and they believe that prices of manufactured goods should be immediately revised to that level. Does it interest them that that was only a price on paper, designed to start the manufacturer buying to the end that a rising market coerce all of the rest to come in and put it still higher? Not a whit, rubber was when they placed their contracts? Will they guarantee any sort of new level of low prices for crude rubber for six months or a year? In the event of a sudden rise, are they likely to urge an advance in list prices or a diminution of discounts? Not they. Put not one-half of a whit. Do they remember how high your ear to the ground—the deaf one.

THE A. C. A. SPECIAL TIRE.

THE announcement that the Automobile Club of America was to sell an automobile tire to its members, that is, a special tire bearing its own brand, attracted

a great deal of attention and much comment, adverse and otherwise. As to who manufactures it the consensus of opinion among those who handle automobiles pointed to a concern new in the field, not very large, and one that had never made a record as a producer of high-grade tires. In other words, they believed that the officials of the club had been fooled. Such, however, is very far from being the case. It transpires that the company who are to build these tires which, by the way, will be ready for delivery to members of the club in all regular sizes as we go to press, is one of the large tire producers. Its experience in tire manufacture, its equipment and responsibility, are beyond criticism.

The club for this special tire is paying 25 per cent. more than it would pay for any standard tire on the market. With its large membership, together with the alert, intelligent management of the accessories department, the club will undoubtedly furnish a great number of tires. It is understood, however, that the club officials have no desire to discriminate against any of the standard makes of tires which they will supply to members on requisition.

AMERICAN MANUFACTURERS, WHO ARE LOOKING for foreign trade, owe a debt of gratitude to the Bureau of Manufactures of the Department of Commerce and Labor at Washington, the extent of which they hardly recognize, for the work it is doing in clearing for them the way to export business. The foreign tariff work the bureau is doing is among the most important of its labors, and no expense or trouble is spared to keep its records and publications in this department complete and up to date. Information in relation to the tariffs of foreign countries can always be obtained on application to the bureau, and a list of individuals and firms engaged in foreign trade, showing the lines of goods and the countries in which each is particularly interested, is now in course of compilation, so that exporters may be kept fully informed of all tariff changes abroad and subjects selected for immediate treatment in the Bulletins that will prove most generally helpful.

UNSEASONABLE WEATHER MAY MEAN MUCH TO RUBBER MANUFACTURERS. Late snows or none, lack of slush in city and town, notably restrict the sales of rubber footwear. "Dry spells" spell disaster to makers of rubber clothing and mackintoshes, and a late, cold spring results in no garden hose business, and a greatly restricted sale of pneumatic tires, which latter condition is one from which we are but just emerging.

TIME WAS WHEN THE PERIPATETIC FORMULA seller was listened to with respect by most rubber manufacturers and his wares had a value proportionate to the air of mystery he could assume and to his eloquence. His day is done, however. A broader knowledge of crude rubber, of ingredients used, and of course, has dissipated the fog that enveloped the "secret compound" and instilled confidence in one's own where once was uncertainty. But there is another factor, the appreciation of which has done much to discourage compound selling. Climatic conditions affect not only the ingredients entering into various compounds, but their use in making up and the cures. Approved German compounds may not do at all in England or the United States. Formulæ used for years in Japan would have to be radically changed to do in Italy. French practice in mixtures is not adapted to our own rubber mills. Indeed, locally the same is true. Massachusetts factories must use compounds and cures different from those used in New Jersey. Akron and New York have varying climatic conditions. It may be that one day one of the bright young investigators who are doing so much to standardize the various steps of rubber factory practice will take this subject up as a whole and formulate rules for compound and cure that will take into account humidity, temperature, etc. Until that is done, however, compounds from a distance will be viewed with distrust.

THE REPORT that the "chewing gum trust" are to put upon the market special extra large packages of gum for cows, so far lacks verification. The plan, however, is not without its points. Cows are the most natural constant and contented cud chewers of all the animals. A cud of chicle flavored with vanilla, spearmint or sen-sen would be far more lasting and genteel than the slippery grass ball now in general use. It might also add an aromatic flavor to the milk. Just how much chicle would be required to supply the 21,000,000 odd bovine chewers, it is hard to estimate. It is safe to say that it would take the whole of the visible supply, not an unmixed evil, for it might limit the use of gum by the present small army of human cud jugglers whose endless mastication in public is far from pleasant, to say the least.

IT SOUNDS PARADOXICAL, but rubber manufacturers dread a sudden drop in the price of crude rubber, just as much as they do an advance. Take, for example, the late break. Manufacturers here and abroad had millions of dollars worth of goods made up for spring and sum-

mer. These goods were made of crude rubber for which they paid a high price. When the market went off, however, they were forced by customers and by competition to take much less for them than if no such drop had taken place. There was no way out of it but to sell and pocket their losses.

AKRON, OHIO, with its fourteen (or is it more) rubber factories, regards itself as the greatest rubber manufacturing center in the world. It does not take into account, however, the great rubber town of Setauket, Long Island. The rubber names that odorously cling to that burg are the Long Island Rubber Co., L. B. Smith Rubber Co., Brookhaven Rubber Co., North American Rubber Co., Liberty Rubber Shoe Co., Manhattan Rubber Co., Manhattan Rubber Shoe Co., Iroquois Rubber Co., Montauk Rubber Co., Pará Rubber Mfg. Co., Excelsior Rubber Co., together with some dozen whose names cannot at the moment be recalled, and further together with the new Co-operative Rubber Co. All of these and more centered about one modest plant and were largely dominated by one interest—and operated by the same half hundred workers—a far more conservative and concentrated procedure than is evinced by the "Summit City's" huge factory buildings, millionaire stockholders and 13,000 employees.

THE PNEUMATIC TIRE USER MUST WONDER at the remarkable mileage that the other fellow occasionally gets, if he reads the advertisements of the great tire makers. He does not have the same experience and thinks he is robbed. But he isn't. Tire life depends upon five conditions besides good material and construction. Intelligent driving, good roads, the weight of the car, tire size, and good luck. To these might well be added climate. The man who happens to have all of these factors operating in his favor will get a wonderful mileage. When most or all of them are against him he will not.

THE SOMETIMES ACCURATE *Hartford Times*, under "Science Notes," reports that a German professor has produced artificial rubber by boiling "isofrem" in acetic acid. He thus produces "a grayish composite having all the qualities of rubber." The trouble is to secure the first ingredient. "Isofrem" is a distillate of Iceoform, which is boiling water kept at 375 degs. Fahr., until it freezes solid. It is then cut into inch cubes, shellacked and exposed to the rays of the moon until they turn greenish pink. It is then ready for use.

British Guiana and India-Rubber

By the Editor of THE INDIA RUBBER WORLD.

FIRST LETTER.

Mistaken Ideas of British Guiana.—My First Visit to Georgetown.—Up the Essequibo River.—Old Dutch Ruins.—The Penal Settlement.—At the Sisal Man's Bungalow.—Native "Heveas."—A Railroad Ride.—The Botanical Gardens.—Rubber Experiments.—The Director of Science and Agriculture and His Work.

MAPS of the world or even of continents are exceedingly misleading. They do not give the smaller countries the size value that belongs to them. For example, on the map of

South America the Guianas appear to the cursory view as three tiny plots of land hardly worth consideration on the part of the pioneer planter or traveler. The truth is they are very sizable countries and there is room and opportunity in abundance. Nearly 60,000,000 acres is the estimated area of British Guiana with almost 11,000,000 easily accessible. A country equal in size to England, Scotland and Wales, traversed by great rivers, heavily forested, rich in every tropical product, an English colony with all that means in the way of stability, liberty and fair treatment, is surely worth knowing. Travelers, who have never even sighted its shores, have given it a reputation for extreme heat and unhealthfulness, but they were working without facts. It is hot, but not torrid, and the trade winds, blowing the year round, bring

evenings so cool that a blanket is a comfort before morning. My first visit to British Guiana was so interesting that I went

again the following winter, and while my stay was brief, because of the death of my associate editor, I hope soon again to visit that "magnificent province" that is but a short week's run from New York.

It was St. Patrick's Day in the morning when first I saw Georgetown, and we docked promptly at six. The gang plank was hardly down when the Sisal Man came aboard and declared

if we were prompt we could catch the up-river boat and not be delayed in town two or three days. The Sisal Man, be it understood, had a bungalow and a big plantation some forty miles in the interior, was going in for rubber, and had been cabled by friends in New York to show the country and make our stay pleasant.

The stewards, customs' officers, and even the strangely dressed *cabman*, all helped and we were aboard the side-wheeled steamer, *Guiana*, ten minutes before the sailing time, ready for the eight-hour journey up the Essequibo river. We were the only first-class passengers and had chairs under awnings on the upper deck. The deck below was crowded with blacks, coolies, poor whites and coffee-colored *non-descripts*, who sat around on the luggage and ate and smoked and gossiped.

We got away promptly, as there is a heavy fine otherwise, and these little flat-bottomed pudgy, lazy-looking steamers keep to sched-



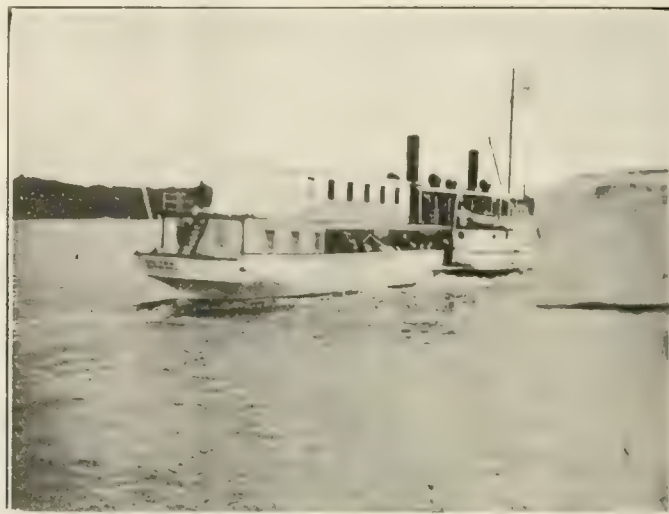
ORIGINAL *SAPIUM JENMANI* IN BOTANIC GARDENS.
[PLANTED BY MR. JENMAN, 1884-5.]

ule in a way that makes some of the twin-screw triumphs of more pretentious lines look very inefficient. We first went down the coast some five miles and out to sea a little, then turned into the mouth of the river, skirting the low-lying mainland on the left and a long verdure-covered island on the right. The shores were so low-lying with their fringe of man-

swamps, the palm-thatched huts standing on stilts above the river mud, and finally, Fort Island. Here was once the headquarters of the Dutch in this part of the world, and it was then that miles of what is now jungle, was exceedingly productive sugar land. The old brick fort still stands a picturesque ruin, its rusting cannon almost buried by grass and vines, and



GEORGETOWN HARBOR.



STEAMER "GUIANA" ON MAZARUNI RIVER.

groves on either side that, except for an occasional opening, giving a glimpse of an interior sugar estate, the scenery was not particularly varied. Along the mainland side, set in the shallow water some twenty feet out from the jungle, was a row of telegraph poles which extended for miles, the wires strung only a few feet above high water. The fact that such engineering was possible spoke eloquently for the stillness of the great river and of a very gentle rise and fall of tide.

Tuschen was the first stop. All to be seen was a wooden

just beyond it a little settlement of a dozen houses and a huge church.

Soon after we entered the foot-hills, the swamp growths disappeared and the beauties of the tropical uplands became apparent. Small settlements and plantations on either side of the river sent out boats for mail and parcels, and at three o'clock we passed Bartica, the principal settlement at the entrance to the gold fields.

Beyond, on the opposite shore and a little way up the Mazaruni



RUIN OF OLD DUTCH FORT, KYR-OVER-AL, MAZARUNI RIVER.



PUBLIC BUILDINGS.

pier extending from the jungle-fringed land through half a mile of shallows, terminating in a little steamer landing and shed for storing goods. At eleven o'clock we were bidden to breakfast in the main saloon. The passengers grouped themselves at one end of a long board table, the middle of which was used for serving, while at the farther end dishwashing went busily on during the meal. The food was wholesome and abundant and all discussed it with good appetites. Then we returned to the deck chairs to smoke and view the mangrove

river, is the Penal Settlement of the Colony. From the water front it shows substantial wharfs, massive stone buildings, well-tilled gardens, the whole protected from the river by substantial stone coping. The *Guiana* left us at their pier, which was patrolled by huge negro guards, who allow no one to land without a special permit.

A tent boat took us across the river from here, a half-hour journey, which ended in a little bay, on the shore of which stood the wife of the Sisal Man, who warmly welcomed us to "The

Hills," as their charmingly-situated bungalow was called. Here we made our home for several days and dwelt in exceeding comfort. The house, built on a cleared hill top, set up above the ground on substantial greenheart piers, fronted a river view that was rarely beautiful. The gentle breeze and the cleared land kept away the mosquitoes that might be found in the bush below. On the slopes of the gently-rolling hills about the plantation house were plantains, bananas, pineapples, paw-paw, and an infinite variety of fruits and vegetables, tropical and sub-tropical.

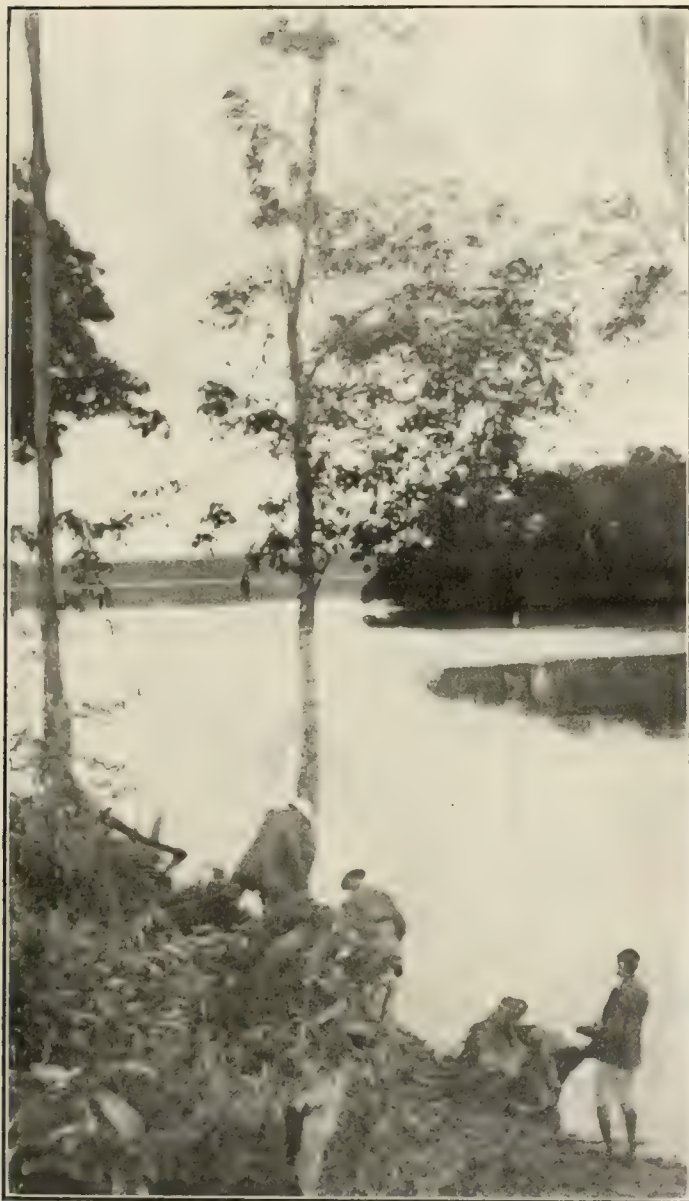
Hevea will grow on flat lands or rolling lands at a variety of altitudes, if only good soil, plenty of moisture, a well-distributed and abundant rainfall, and a certain surface drainage were present, with, it goes without saying, a tropical temperature added. Of the journeys over the cleared lands, of excursions



PROFESSOR J. B. HARRISON, M.A., C.M.G., F.L.C., F.C.S.

through the jungle, up and down the river, of maps, photographs and interviews with those who know the Hinterland, there were many, and by the time we were obliged to return to Georgetown I felt somewhat acquainted with British Guiana. I forgot to say that we discovered a *Hevea* growing wild at "The Hills" and got both seeds and rubber from it.

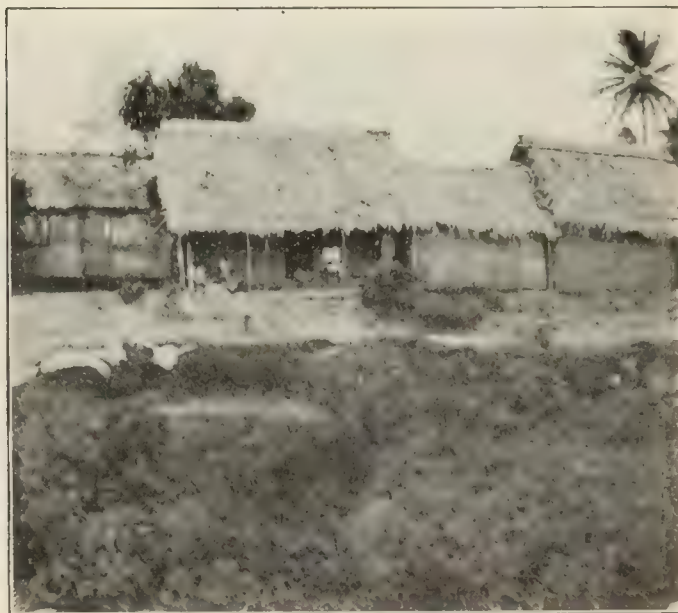
To disassociate this *Hevea* from the *Brasiliensis* I called it the



THE AUTHOR TAPPING A WILD "HEVEA."

Close to the house were flower beds containing almost everything in the way of flowers and shrubs that one could wish.

I have called our host the Sisal Man, because of the great fields of bayonet-leaved plants that he had planted there, and which were growing thriftily. He had also some rubber, not much, but just enough to prove that *Hevea* would grow there as well as elsewhere, something that he was delighted to know, for it is a curious feature of planting opinion that the man who is accustomed to the tilling of the flat alluvials does not believe that rolling highlands can by any possibility be cultivated. So, too, he of the uplands considers all lowlands as swampy, sour, and useful only for brick-making. The fact is, of course, that



COOLIE QUARTERS AT TUSCHEN.

Guaydnensis. From the product of the latex it was certain that it was not the former. Until some botanist shall examine it in flowering time it may be called *Guayanensis*, *confusa* *Spruceana* or almost any of the lower types without fear of successful contradiction. Nor does it matter much anyway.

On the day of our return to the city we rose at daybreak, as

indeed we always did, and dressed to the music of the roaring baboons in the nearby forest. We only went a part way down the river this time, getting off at Tuschen about noon. What a long walk that was up the pier and through a mile or more of coolie huts and sugar mills. On all sides were drained lands, the broad canals running as far as the eye could reach, and the noontide sun was hot.

After this walk, during which the shade from our helmets and umbrellas was most grateful, we reached the railroad and

out as upon a map. The general planting was sugar cane and next came rice. Coolies were everywhere, working in the fields, grouped before their huts, observing queer festivals that seemed to be half baptismal and half musical, fishing, washing clothes in the sluggish canals, always busy and quietly happy. Their quarters were easily distinguishable even from the distance, as they have many small red flags on bamboo poles, the exact meaning of which I was unable to learn.

The sugar lands are not only very flat, but often only permit



CLEARED LAND ON THE MAZARUNI RIVER.



THE MAZARUNI RIVER AS IT ENTERS THE ESSEQUIBO RIVER.

entered the tiny station reserved for the whites. I wanted a timetable and invited the worthy stationmaster to present me with one. He couldn't do that, however, as one comprised his whole stock. I might look at it if I wished and he handed me a pamphlet that I at once coveted. He was very polite, but no amount of persuasion or bribery could induce him to either give

shallow drainage. In many of the great abandoned sugar estates the drains were choked with masses of water hyacinth in full and gorgeous bloom. Much money must have been spent in reclaiming this vast territory from the sea, and it is to be hoped that something agricultural may be found that will make it as prosperous as it once was. The railroad stations, such as



THE PENAL SETTLEMENT, MAZARUNI RIVER.



YOUNG "HEVEA BRAZILIENSIS" AT "THE HILLS" ESTATE.

or sell it to me. He did finally agree to lend it to me until I came back and accepted the shilling that I tendered with much gratitude. When next I go to British Guiana I shall certainly return the pamphlet.

In order to get a good view of the country we took the up-train to the terminus of the road, which is Greenwich Park. So flat was it that going and coming from Tuschen to Greenwich Park and back to Vreed-en-Koop, everything was spread

"Vreed-en-Koop" and the "Hague," reminded one that it was the Dutch who first borrowed this land from the sea even if it is British territory today.

During our ride we saw considerable herds of water buffalo, feeding and wallowing in the muddy fields. It is said that only coolies are successful in handling them, as they show a violent antipathy for the whites. Of the birds that we noticed none were so beautiful as the Guiana robin, a scarlet-bodied, quick-

moving bird, that looked for all the world like our northern scarlet tanager. We passed the abandoned Windsor Forest Estate, that not long ago had 4,000 acres under cultivation and was very prosperous until the sea broke in and laid it waste. The extensive mill, administration building, and coolie quarters rapidly going to pieces and the land growing up to jungle; it was not a pleasant sight.

At Vreed-en-Koop we boarded the small side-wheel steamer *Amy*, were ferried across to Georgetown and as evening fell found ourselves quartered in the huge four-story wooden hotel that everybody said was "very bad," but which we found clean, quiet and comfortable. The servants, to be sure, were slow-footed blacks, good-natured, forgetful and easily confused. They were honest, however, and exceedingly grateful for even moderate tips. The city, which is twelve feet below the sea level, is well lighted, excellently policed and has an up-to-date electric car service of which it may well be proud. It is very hot in the middle of the day, but at nightfall the sea breeze brings comfort and the whole city gathers on the broad esplanade that runs parallel to the great sea wall and gossips and promenades and is content.

I would not have missed the visit to the botanical gardens for much. They are certainly fascinatingly beautiful, and

or more seedlings and begin what may be a goodly plantation in embryo.

The *Sapum Jenmani*, which is indigenous to British Guiana, and which is really a beautiful tree that gives good rubber, is quite a favorite in this part of the world. Much is being done with it experimentally, and it is to be hoped that it proves itself commercially profitable.

England shows wonderful wisdom in her selection of men to administer the affairs of the various departments of her far-away possessions. When more than twenty years ago she sent Professor Harrison as Director of Science and Agriculture to British Guiana, she did not err in her choice. An athlete, as strong mentally as he is physically, with a string of letters after his name that tells of many degrees conferred by learned societies, with a broad knowledge of tropical conditions and needs, what he has done for the colony is beyond tabulation. When gold seemed the most important of the country's problems, he headed exploring parties that brought back and analyzed and classified rock specimens from all parts of the colony. His work in sugar cane, cocoa, cocoanuts, etc., etc., has been enormous and of the greatest value. And it is upon him that the rubber planter will depend for advice and help as the country turns to the extensive exploitation of that product, as it surely will.



A BEAUTIFUL DRIVE IN THE BOTANICAL GARDEN.



BROAD CANAL IN GEORGETOWN FILLED WITH "VICTORIA REGIA."

whether or not one knows anything about palms, orchids, foliage plants or tropical flora, a visit is well worth while. An official from the Experiment Station took us out to see plots planted to *Hevea*, *Castilloa* and *Manibot* on flat undrained ground. The experiment was designed to show to owners of abandoned sugar estates that rubber must have a certain amount of drainage. Many of them need such instruction, for obsessed by the belief that the *Hevea Brasiliensis* if it had legs would wade out into the water and stand kneedeep if possible, they have planted in the drains and naturally the trees have died. These experimental plantings do not look healthy and no one expected they would. On the other hand down near the administration building are *Castilloas*, *Sapum* and *Heveas* from one to ten years' old with about four feet of drainage that are equal to any to be found anywhere. The department is doing everything it can to stimulate the interest of planters in rubber. It has imported seed and thousands of young *Heveas* are growing in Government nurseries, which are sold at cost to the planters. In addition to this, in order that the small farmers may be possessed of a few rubber trees, they have them displayed in the general market where the common people come daily. The result is that scores, who feel themselves too humble to visit the gardens, and if there would never dare to suggest a purchase, carry home one

I had a very pleasant hour and a half with him on the occasion of my first visit, and he showed himself fully alive to the importance of rubber culture. He had many samples of rubber from *Sapum*, *Castilloa* and *Hevea* and much balata, including the bastard balata, a product much like potto rubber. By the way, a Georgetown man has a process for making this plastic, of which he thinks a good deal. He is also interested in the production of banana rubber, of which I saw a small sample in the Georgetown Museum. It was about the consistence of reclaimed mat stock, but a trifle stickier.

The Governor was very busy governing while I was there, so I did not break in upon him. He, however, was good enough to write to a friend, saying that he had instructed the Department of Lands and Mines and the Botanical Department to present everything in the way of maps, books, photos and information that I might yearn for and they promptly and courteously complied.

Georgetown has one exhibit that no other city in the world can boast. Through the middle of one of the broad streets stretches for a mile or more a deep fresh-water canal. This from bank to bank is crowded with the huge brown-green leaves and fragrant pink blossoms of the *Victoria Rêgia*.

(TO BE CONTINUED.)

INDIA-RUBBER AND BALATA IN DUTCH GUIANA.

THE issue of the Balata Company, Surinam, Limited, mentioned in my letter of last month, was oversubscribed in Rotterdam and Antwerp forty-three times. It is quite evident that the figures published in the prospectus of this company have induced many speculative green-horns to try their luck at this business. I hear already of several new ventures—somebody will have to pay for their experience. I have met here at least two parties who displayed great interest in our rubber plantations; some show disappointment when they find that they cannot buy planted rubber or rubber estates in full production. I must repeat that only the most advanced plantations have small quantities of tappable trees and that the exploitation of our wild rubber, the *Hevea Guyanensis* is still in the embryonic stage, the total quantity exported last year being not more than five hundred pounds. The few people who now know how to tap and make rubber would bring it to Paramaribo for 60 American cents per pound.

On the gold placer property of a French company, far up the Marowynne river, Le Société des Mines d'or de l'Awa, a beginning has been made with rubber exploitation. I saw the very first samples of their product, very nice *Guyanensis* rubber, prepared for them by a Brazilian seringueiro, who had contracted to work there as a gold digger. Of course he condemned every system of cutting except his own, herring-bone, spiral or whatever they might be, and proceeded to equip himself with a *machete* and a lot of little cups, baked Indian fashion and stuck to the tree with clay. At any rate, he satisfied himself and his employers, and arranged to go and look out for his family in his native country and bring them back with him to the Rawa placer, to make rubber. Extensive nurseries are laid out there for wild *Hevea Guayanensis* seedlings and also for plants from the genuine Pará seeds from Ceylon.

At plantation Clevia 1,600 *Castilloas*, six to seven years old, yielded 75 grams of dry rubber per tree for the first tapping. After the work was done, I ascertained that the laborers had tapped rather more than two quarters of the trees. It has not yet been ascertained how many times a year the trees may be tapped on this method. The wounds are healing nicely. So it is thought it can be done four times a year, but then not more than two quarters may be tapped at once. The second tapping to be done between the first cuts on the same quarters, and the third and fourth on the other quarters.

The cost of collection was 1 fl. per kg. (\$.40 a kg.). A Javanese could tap about 10 trees a day for f. 0.60. It was the first experience, so they were very awkward.

The milk is very thick and does not run out of the cut. That is to say, some latex runs away, but it is so watery that it does not count. The rubber can be left to dry on the tree and collected some hours after tapping, or next day as a very pure scrap. Or the latex can be scraped with the finger or with a brush immediately after tapping into a tin can; diluted with about four times the amount of water and brought in liquid form to the factory to be washed and coagulated.

According to the latest figures made public by the government of Surinam, the number of laborers engaged in the balata collecting for the year 1909 was 1,448, and their collections amounted to 628 tons; in the year 1910, the number was 2,698, and they produced 893 tons of balata. The greater number of these laborers came from the adjacent British colonies.

The average production of one balata gatherer was 357 kilos (787 pounds) in 1909 and 331 kilos (729 pounds) in 1910, though there was one good balata bleeder who made over two tons by himself and several who obtained over a ton in a season. They really only work a small part of the year and when they are idling in Paramaribo, they do very little more than play on the

guitar and sing; no wonder their throats are dry. As a rule, however, and when at work, these people may be called sober. The Javanese laborers are turning out to be very careful tappers and are quite content when they can earn 20 to 30 American cents a day. This week one of the immigrant steamers carried back to Calcutta 600 coolies who have served out one or more contracts of five years on the estates. One cannot but be amazed at their saving capacity. Their average earnings, as a rule, are a dollar a week, out of which they must pay for their food and clothing. Nevertheless these returning coolies carried with them 57,995 florins [= \$23,319], besides jewelry worth 10,800 florins [= \$4,341].

It may interest you to know that the revenue of the Surinam government for 1910, was 372,500 florins [= \$149,544] more than was expected. Of this amount 121,000 florins [= \$48,642] was for taxes and payments on balata concessions.

A NEW "CASTILLOA" TAPPING DEVICE.

THIS is a small hammer, of which one side is changed into a curved knife with the cutting edge turned downwards. The wooden handle has just the same length as an ordinary hammer. The cut made in the bark of the tree is so large that a man's finger can be inserted into it.



"CASTILLOA" TAPPING TOOL.

The knife is used in the manner of a tree-marker, but for tapping it has the advantage over an ordinary tree-marker that the pull is given in the very same direction of the cut and that the weight of the hammer gives weight to the stroke so that the knife does not stop half way in the bark, but gives a smooth, clean cut. With a small pocket whetstone, the edge of the knife may be kept exceedingly sharp. In tapping, the circumference of the tree is divided into four equal parts. The tapping is conducted on two such parts opposite each other at once. The cuts are made with the hammer knife at equal distances of about one foot, the one above the other, each cut being parallel with the former and running aslant over the part to be tapped. In this way the trees are tapped from the base to as high as the laborers can reach. With a ladder they can get to 15 to 20 feet. [Invented by J. W. Gonggrijp, Paramaribo, Dutch Guiana.]

THE SEVENTEENTH VOLUME OF THE YEAR BOOK (1910) of the United States Department of Agriculture, will shortly be published. A voluminous publication, of nearly 600 pages, it contains, in addition to a general report on the operations of the department, a number of articles contributed mainly by members of its scientific force, treating on important questions at present occupying the attention of the public and relating to food supply, forestry, agriculture, good roads, etc. There are 49 full page illustrations in the report, of which eight are colored, while the statistical appendix is a remarkably complete presentation of agricultural conditions in the United States. The volume is distributed principally by Senators and members of Congress, to whom early application should be made by those desirous of securing a copy.

SEND for Index (free) to Mr. Pearson's "Crude Rubber and Compounding Ingredients."

The India-Rubber Trade in Great Britain.

By Our Regular Correspondent.

EXCEPT for the excursionist from the country, there can be little doubt that June or July are more suitable months for an exhibition in London than September, in which month people are widely scattered on holiday tours and London is generally supposed to be half empty. No doubt to a good

THE EXHIBITION.

many prospective visitors with well-filled purses, the fact that the date of this year's exhibition synchronises with the Coronation festivities is matter for congratulation. There are others, however, and among them small shareholders in wild-cat two-shilling rubber companies, who have to consider closely their personal expenditures and who are haunted by the fear of exorbitant hotel charges or of failure to obtain accommodation at all. Though, of course, the London season, unlike what corresponds to it in the Continental capitals, does not end until the close of July, yet there is sure to be a large exodus of Coronation visitors early in the month and I do not suppose that, at any rate for the last week of the Exhibition, visitors from the country need go in dread of having to walk the streets. By the way, it would be a great convenience to many visitors if a list could be kept of names and addresses of prominent rubber men from abroad who are in London for the Exhibition. This would of course entail extra work which might be carried out by some out-of-work clerk so as not to put further strain on the mental temperament of the manager and secretary. It is bound to happen in some cases, that where two men wish to meet and renew an old acquaintance, one will have left London before the other arrives or they may only miss meeting by attending at the Hall at different hours. In the latter case the list I have suggested would enable the telephone or post to be used with the desired result. The visitors should be classified as Americans, Germans, French, etc. No further information should be given or else the list will be used by strangers for business purposes instead of being simply to facilitate the meeting of acquaintances or at any rate of those who know one another by repute.

It is announced that the Margett International Sectional Tyre Co., Limited, have taken premises for a factory at Newton, near

TIRE NOTES.

Hyde, some seven miles to the east of Manchester. The intention is to manufacture their tires, which so far have been made on contract by certain rubber manufacturers. The Margett company, which, as a syndicate, has been in existence some little time, was brought out last January as a private limited company with a capital of £250,000. The tire is a pneumatic motor tire made in sections of 18 inches each, any of which can be replaced if damaged. Though somewhat on the lines of the Hartredge tire as far as replacement in part is concerned, it will be remembered that the latter was a solid tire and of more numerous sections. The Margett tire has for some time been undergoing extensive road trials and it is to be hoped that the metropolitan police authorities will not drop on it as they did on the Hartredge, which was convicted of cutting up the roadways. The works are expected to be ready for manufacturing in July. The two permanent directors are A. P. Ford-Moore and D. Ampleford, the office being at 56 Moorgate street, London, E. C.

The contract for the supply of Fiat tires for the current year has been placed with Charles Macintosh & Co., Limited. These tires are being largely used in London, and must not be confounded with the K. T. tire, which is being brought out by another London company and is having extended trials in Paris.

The handsome new offices and stores of the Continental Tyre

and Rubber Co. (Great Britain), Limited, in Brompton Road, London, are now ready for occupation and the same may be said of the new premises at Milton Buildings, Deansgate, Manchester, the new home of the local depot. Milton Buildings is also to be the locale of the Manchester offices of Almagam, Limited, motor tire manufacturers.

At 38 Deansgate is to be found the new depot of the Pirelli Tyre, a move having been made from Corporation street.

AN illustrated communication on this subject by A. Chaplet and H. Rousset has recently appeared in *Le Caoutchouc et*

THE DERESINATION OF RUBBER.

la Gutta-Percha and it gives a useful summary of the patents taken out for this purpose. The subject has long been attractive to inventors, though I have never shared the optimism of those who foretold great advantages to accrue to the rubber trade by systematic deresinification of the various brands of rubber known to commerce. Since the establishment of the Malaysian Rubber Co.'s works at Borneo, to deal with jelutong on a large scale, the process has of course passed the experimental or desultory stage, though I do not know whether its commercial success has yet been testified to in the form of a satisfactory balance sheet. Since the Goebilt works commenced operations one or two short patents have been taken out with the same object in view, but I am not in possession of any figures testifying to their financial success. On the general question the above authors make the interesting remark that the very resinous rubbers are frequently the product of a latex which contains other impurities such as albuminoids and oxydases, which still remain in the rubber after deresinification tending to depreciate its value, and they refer to the further treatment which has been found necessary to obviate the danger of premature decay in the extracted rubber. The Malaysian company's product has now been on the market some time and there should be plenty of evidence as to its value and stability. The guayule producers, after perfecting a process of deresinification, have abandoned it and sell their product with its high resin content intact.

A paper entitled "Contribution to the Application of Artificial Cold to the Commerce and Industry of Caoutchouc" was pre-

REFRIGERATION IN THE RUBBER INDUSTRY.

sented at the International Congress of Refrigeration at Vienna in October last by M. Jean Boutaric, of Paris. I have only recently had an opportunity of reading the rather lengthy paper in full, hence the delay in these observations on it. The main impression left on me by its perusal is that the word "application" in the title should have been modified into "suggested application" because, although the paper is full of proposals for the utilization of artificial cold in the industry, there is only one reference, and that a very brief one, to its application. This has reference to fine cut sheet. Among the suggested applications of cold are the freezing of raw rubber to prevent decay or tackiness; the cooling instead of heating of the air in rubber drying stoves; the freezing of rubber scrap to facilitate its comminution in the regenerated rubber industry, and the artificial cooling of rooms where vulcanized rubber goods are stored. A description of a naphtha recovery plant is also given, where the recovery is 50 per cent. with the condenser water at about 60 deg. F. It is suggested in the paper that a better recovery might be obtained if the water were artificially cooled to freezing point. It has of course, I may say, been the general rule to cool down the condenser water by refrigerating machinery in English recovery plants. Although, of course, the paper is interesting as throwing out free suggestions as to improvements in the in-

dustry, it would have been much more so if it had contained the results of experiments testifying to any prospective advantages. The members of the Congress were very largely men interested in the preservation and transportation of food stuffs and there would probably not be half a dozen present who would be interested in the paper—except perhaps the refrigerating machinery manufacturers. With regard to cut sheet, I have never heard it suggested that the freezing of the blocks had any effect on the quality or life of the rubber. Such solidification is necessitated in order that the cutting process may be effectively carried out. If the freezing improves the rubber, how is it that the sheets produced from blocks solidified in the air on a cold winter day are considered if anything superior to those which have experienced a lower temperature as the result of artificial refrigeration? The suggestion to cool down the storerooms where rubber goods are kept strikes me as the most important suggestion in the paper, and a cheap way of testing this would be to enlist the sympathy and services of some engineer connected with one of the Siberian placer gold mines. With a box of selected rubber goods to keep under observation he would have a mental stimulant to while away the tedium of enforced inactivity above ground.

Sir Edward Tennant, Bart., whose name appears in the list of vice-presidents of the Rubber Exhibition, is now entitled to a slightly higher place on the list as he

BREVITIES.

has recently been raised to the peerage under the title of Lord Glenconner.

His father, Sir Charles Tennant, Bart., was prominently connected with the alkali trade at Glasgow and with the very successful Indian gold mines.

Sir H. H. Johnston, K. C. B., C. M. G., another vice-president, has very readable articles in the April numbers of two of what are usually considered the "heavy" reviews. In *The Nineteenth Century and After* he discourses on "The Seamy Side of Travel" to which no doubt the editor of THE INDIA RUBBER WORLD could add something from his experiences in the tropics. His second and more important article is in the *Quarterly Review* and is entitled "The Preservation of Fauna and Flora." It is to be hoped that this article will receive more than passing attention from those who are in a position to aid in the reforms advocated though I am afraid that there is not much to be expected from the sportsmen whose operations he, in my opinion, so justly denounces. Probably the *Quarterly Review* has not a very large circulation in African or Asiatic rubber planting

sections, so these few lines of reference to the subject can hardly be considered superfluous.

Connolly Bros., Limited, of Vale Mills, Blackley, near Manchester, have become involved in financial difficulties and a receiver has been appointed. The business, which is an old established one, is concerned with the production of rubber insulated wires of the smaller diameters. The firm were not actually rubber manufacturers but contracted for their varied rubber requirements with rubber manufacturers, a course of procedure followed by other firms in competition with them.

The works of Hutchinson, Main & Co., Limited, of Springvale, Glasgow, are offered for sale by auction. This announcement was made shortly after the decision in the legal case referred to in these notes last month.

With reference to the action brought against the Rubber Regenerating Co., Limited, Manchester, England, by the North-western Rubber Co., Limited, Litherland, England, THE INDIA RUBBER WORLD is advised that the matter has been settled without being brought into court—that is, satisfactorily to all concerned, and that both companies will continue along the same lines as heretofore. Incidentally, our English correspondent referred to the general manager as Mr. Mamsick, evidently meaning M. H. MacKusick.

BRIEF NOTES FROM JAPAN.

M. Yoshida, manager of the important Japanese rubber manufacturing company, The Asahi Gomu Co., Limited, of Tokyo, has gone to the Federated Malay States, taking with him a number of his associates, to take up land and plant *Hevea* for his company. This to our knowledge is the third enterprising rubber company in Japan that has taken measures to plant *Pará* rubber, and thus assure a cheap and constant supply, no matter how the market goes.

* * *

K. Takahashi, rubber expert for the Kashima Gomu Co., Tokyo, is the inventor of a machine for cutting rubber thread.

* * *

An association of Japanese rubber manufacturers has been formed with a title which translated literally means "Japan Rubber-Business-Circle." It has some 70 members.—*The Gomu Shimpo*.

JAPANESE IMPORTS OF INDIA-RUBBER.

[From the *Gomu Shimpo*.]

	1908.		1909.		1910.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
Crude Rubber	779,647 kin 1,033,032 pounds	886,578 yen \$441,516	998,870 kin 1,321,463 pounds	1,465,292 yen \$729,715	1,193,146 kin 1,580,918 pounds	3,042,396 yen \$1,515,093
Rubber Boots	28,307 pairs	80,381 yen \$40,030	8,975 pairs	21,622 yen \$10,768	3,090 pairs	11,650 yen \$5,802
Rubber Shoes	30,066 pairs	38,215 yen \$19,031	24,337 pairs	24,763 yen \$12,332	16,625 pairs	14,761 yen \$7,351
Belting and Hose	131,630 kin 174,410 pounds	117,369 yen \$58,449	69,106 kin 91,566 pounds	57,464 yen \$28,619	67,960 kin 90,047 pounds	59,244 yen \$29,504
Cables, Insulated	1,826,660 kin 2,420,324 pounds	420,277 yen \$209,297	2,040,789 kin 2,704,045 pounds	358,617 yen \$178,591	7,295,988 kin 9,667,184 pounds	1,594,923 yen \$794,272
Insulated Wire	3,592,575 kin 4,760,361 pounds	1,446,852 yen \$720,530	4,477,797 kin 5,933,081 pounds	1,517,017 yen \$755,474	5,386,662 kin 7,137,327 pounds	1,637,381 yen \$815,416
Waterproof Cloth	212,928 yards	126,123 yen \$62,809	280,120 yards	173,248 yen \$86,278	297,329 yards	184,567 yen \$91,914
Engine Packing	549,071 kin 727,519 pounds	286,286 yen \$142,570	430,069 kin 569,841 pounds	228,444 yen \$113,765	629,888 kin 834,602 pounds	342,586 yen \$170,608
Plates and Sheets, Hard Rubber	31,034 kin 41,130 pounds	62,367 yen \$31,059	45,448 kin 60,268 pounds	99,473 yen \$49,538	74,195 kin 98,308 pounds	160,178 yen \$79,769
Tubes and Rods, Hard Rubber.	45,455 kin 60,228 pounds	164,326 yen \$81,848	33,176 kin 43,958 pounds	127,721 yen \$63,605	35,309 kin 46,784 pounds	93,535 yen \$46,580

A Last Word Before the Exhibition Opens

SIR HENRY ARTHUR BLAKE, G.C.M.G., President of the International Rubber Exhibition, is peculiarly fitted for his important position. His government work for years was in the tropics. As Governor of Jamaica, of Ceylon, of Hong-kong, he did notable work. As a presiding officer his dignity, wit, and eloquence are rarely equalled.

The work of organization and its infinite detail are all handled easily and successfully by Mr. A. Staines Manders, the organizing manager. Mr. Manders was early in life a newspaper man, but drifted into the management of government and public exhibitions. He found a fitting field in London, the city of exhibitions, and from one year's end to the other has something of interest, of educational value, and of success to attract the public.

While the visiting rubber men will meet and know Sir Henry Blake and appreciate Mr. Manders' ability, it will be to the secretary of the exhibition, Miss D. Fulton, that the details of

For Americans, or visitors other than English, it is sufficient to say that the general offices of the exhibition are at 75 Chancery lane (Holborn), London, where every courtesy will be extended to those visiting the exhibition.

FREAKS OF FOOTWEAR.

THE philosopher who is interested in the progress of the human family, often permits himself great satisfaction in recalling certain human follies of the past and in asseverating that mankind has now become too sane and settled ever again to revert to these particular exhibitions of un wisdom. But you can't always tell what mankind will do.

Men whose personal recollections or historical researches carry them back to the middle fifties, will recall the "Duck Bill" toe, affected by the advanced dressers of those days. It was an impossible, not to say satanic, shoe, with a toe



A. STAINES MANDERS.
Organizing Manager.



SIR HENRY ARTHUR BLAKE, G.C.M.G.
President.



MISS D. FULTON.
Secretary.

[Photographs by Kate Pragnell.]

their many necessities will be referred, and that quiet, modest, level-headed little English woman will prove herself capable of coping with and settling any exhibition question.

It must be remembered that this exhibition is to be much larger and infinitely more informing than was the first.

Foreign governments have taken a keen interest in it, and are not only sending representatives, but putting in costly exhibits. From the Americas, Brazil will have a notable exhibit; the West Indies, British Guiana, and Trinidad will be adequately represented, while from the tropical colonial possessions of Great Britain, Holland, France, and Germany, will come tons of crude rubbers, gutta-percha, plantation rubber, etc., etc.

To the men interested in rubber culture a great number of planters have tapping tools and machines for coagulating and drying, which will be of exceeding interest.

To those who yearn for excellence in product or new inventions, the artistic trophies to be awarded will be of paramount interest. In addition, there will be exhibits of manufactured rubber goods, American, English, German, French, Belgian; banquets of various societies, lectures, publications, indeed, the whole exhibition will be a round-up of practically everything modern in crude and manufactured rubber.

that first grew narrow, and then flared out much wider than the rest of the shoe, at the same time extending from one to three inches beyond the foot. Of course, the rubber men had to produce goods to fit these freaks, but that was not their fault, though distinctly their misfortune.

You would certainly say that it was a safe conjecture that no such pedal monstrosity could reappear in this day of acute reasoning and general uplift. Perhaps it could not; but have you seen the "Rhino Toe"—happily named from its resemblance to the forward part of the rhinoceros? This toe instead of widening like the old "Duck Bill" of our grandfathers, rises majestically into the air. To any one whose five toes are grouped perpendicularly instead of in the usual horizontal arrangement, the "Rhino" must certainly prove a boon; but to the normal man it is a sad freak.

The purpose of this paragraph, however, is not to animadvert upon human frailties, but to call attention to the alertness of the rubber footwear manufacturers, practically all of whom are out with samples of "Rhino Toe" rubbers, which is most praiseworthy, for obviously it is theirs not to argue with the vagaries of fashion, but to match every leather shoe with its rubber equivalent.

HIGH TAPPING OF CASTILLOAS.

THE Mutual Rubber Production Co., No. 1, who operate *Castilloa* plantation at Chiapas, Tabasco, Mexico, have already planted 50,000 cocoanut trees and have a nursery of 75,000 more. After careful examination the Graves Brothers, who operate the plantation, have discovered that there is excellent profit in cocoa in the location named, and expect to find it a profitable adjunct to rubber.

Few planters of *Castilloa* have worked harder to solve the



LADDER FOR HIGH TAPPING "CASTILLOA."

tapping problem than have the Graves brothers. They have experimented on both wild and planted trees. For example, they tapped 300 wild trees of varying sizes from 8 inches in diameter upwards last year, tapping them three times, and actually secured an average of a pound of rubber per tree. They have found that they can tap the tree up to 25 feet from the ground and perhaps higher and that the latex from the upper reaches of the tree is almost as abundant and as rich as it is nearer the ground. The illustration shows a special truss ladder that they have designed for this tapping.

SOME RUBBER INTERESTS IN EUROPE.

GREAT BRITAIN.

THE employees of the India Rubber Gutta Percha and Telegraph Works Co., Ltd., of Silvertown, London, E., have an athletic club, known as the Silvertown Rubber Works Athletic Club. They recently held their first annual sports meeting, quite a number of events being contested and the Graysilver Military Band furnishing the music for the occasion.

THE Midland Rubber Company, Ltd., Birmingham, contemplates a considerable enlargement of its factory, and for this purpose has increased its capital from £28,000 to £80,000 [= \$389,320.]

Victoria Rubber Co., Ltd., Edinburgh, Scotland, with a working capital of £60,000 [= \$291,000], made a profit, last year, of £6,376 [= \$29,828], from which a dividend of 7½ per cent. was declared. The sales increased considerably, but owing to the speculative movement in crude rubber, the profits had not kept pace with them.

The Anglo-Continental Rubber Co. has been founded, with offices at 5 New Brown street, Manchester.

GERMANY.

THE Kabel und Gummiwerk Eupen, at a meeting of stockholders, increased its capital to 400,000 marks [= \$95,200].

Deutsche Kabelwerke Akt. Ges., Berlin. The regular general meeting declared a dividend of 8 per cent. and elected Wilhelm Kleeman, of the Dresden Bank, a member of the Board of Directors.

Land und Seekabelwerke, Cologne-Nippes, in consequence of a falling off in profits reduced the dividend from 8 to 5 per cent. Fluctuations in the cost of raw materials are given as the cause for the reduction.

Rheinische Gummi und Celluloid Fabrik, Mannheim-Neckarau had a net profit of 2,789,638 marks [= \$663,933] to report for 1910, compared with 2,512,672 marks for the preceding year.

Oldenburgische Auto-Bereifungs-Austalt "Anker," Varel, Oldenburg, has been commercially registered, and will manufacture non-skid tires. H. Hische and B. Lewin, Varel, are proprietors.

Hannoversche Gummi-Kaumm Co., at their general meeting, after disposing of routine affairs, fixed the dividend, for last year, at 25 per cent. and decided to increase the capital 500,000 marks [= \$119,000], the increase to be entitled to half dividends for 1911.

Supplementing the notice in the April 1 number of THE INDIA RUBBER WORLD, of the formation of the firm of Julius Roempler, A.-G., rubber manufacturers, Zeulenroda, it may be stated that the members of the Board of Directors are Bank Director Max Reimer, Dresden, and Bank Director Wilhelm Böttger, Plauen i. V.

ASBEST UND GUMMIWERKE ALFRED CALMON A. G.

Asbest und Gummiwerke Alfred Calmon, Aktiengesellschaft, Hamburg, held its regular general meeting on May 10, on which occasion a report for the fifteenth business year was presented. For the second time in the history of the concern the report showed a gross loss amounting, on this occasion, to 1,566,645 marks, and deducting the balance of profits from 1909 and the reserve account, a net loss of \$644,505.21. Reasons for the falling off are given in detail in the report, which concludes with the hope that the period of sacrifices for the introduction of the company's goods being passed and the sales on a steady increase, better things are to be hoped for in the future.

NORWAY.

THE firm of Jacobsen & Braastad, manufacturers of men's and boys' furnishings (founded in 1893; proprietors: O. H. Jacobsen and M. A. Braastad), has taken up the manufacture of rubber clothing

Recent Patents Relating to Rubber.

UNITED STATES OF AMERICA.

ISSUED APRIL 4, 1911.

- N**O. 988,295. Vulcanizer press. A. Adamson, Akron, O.
 988,305. Tire-holder. W. F. Bright, Springfield, Mass.
 988,318. Cushion-tire. C. L. Drake, St. Louis, Mo.
 988,361. Vulcanizer. T. G. Lewis, assignor to The Buffalo Dental Mfg. Co.—both of Buffalo, N. Y.
 988,384. Hose. G. E. Preston, assignor of one-half to G. S. Wood—both of Chicago, Ill.
 988,475. Tire. W. A. Koneman, Chicago, Ill.
 988,766. Reel for hose. J. Frigon, Barre, Vt.
 988,833. Packing ring. C. H. Steves, assignor of one-half to A. E. Peterson—both of Grand Rapids, Mich.
 988,890. Tire rim. F. M. Miller and A. F. Steyer, Pontiac, Mich.

ISSUED APRIL 11, 1911.

- 988,997. Vehicle tire. J. G. Funk, Swissvale, Pa.
 989,049. Vehicle wheel. R. Reininger, Newark, N. J.
 989,089. Rubber boot or shoe. A. D. Warner, Mishawaka, Ind.
 989,171. Adjustable elastic support for concave and flat feet. J. May, Frankfurt-on-the-Main, Germany.
 989,177. Elastic core for packing material. A. Montgomery, Newton, Mass., assignor to American Steam Packing Co., Boston, Mass.
 989,228. Metallic Packing. J. Bowie, Omaha, Neb.
 989,230. Eraser attachment for typewriting machines. L. A. Carter, Oakland, and William J. Halden, Berkeley, Cal., assignors of one-third to G. E. Allen, Mill Valley, Cal.
 989,251. Hose coupling. E. S. Hall, Arcade, N. Y.
 989,332. Vehicle tire. A. P. Burrus, Prescott, Ark.
 989,382. Hose clamp and support. A. R. McCormick, Calumet, Mich.
 989,386. Hose attachment. H. H. Miller, Valparaiso, Ind.
 989,431. Vehicle wheel tire. A. T. Scaramuzzi, Paterson, N. J.
 989,494. Detachable wheel rim. A. D. Foucart, Muncy, Pa.
 989,514. Suction thread. J. R. Sanford, assignor to The Flexible Rubber Goods Co.—both of Salisbury, Conn.

ISSUED APRIL 18, 1911.

- 989,572. Boot and shoe. W. L. Dash, South Tottenham, England.
 989,621. Ice bag. V. C. Madigan, Columbus, Ohio.
 989,673. Cushion heel. W. B. Watson, Keene, N. H.
 989,855. Hose-clamp-applying tool. M. C. Lewis, New York.
 989,952. Conveyor belt. N. S. Dodge, Alameda, Cal.
 989,967. Rubber fabric. F. A. Headson, Milwaukee, Wis.
 989,973. Spring vehicle tire. E. Hess, Chicago, Ill.
 989,985. Elastic webbing. W. Kops, assignor to Kops Bros., both of New York.
 990,046. Tire protector. R. G. Hartle, New Madrid, Mo.
 990,094. Boot or shoe heel. N. R. Arnold, New York.
Trade Marks.
 40,657. Peerless Rubber Manufacturing Co., New Durham, N. J. The word *Royal*. For hose.
 40,660. Peerless Rubber Manufacturing Co., New Durham, N. J. The word *Durham*. For packing.
 40,661. Peerless Rubber Manufacturing Co., New Durham, N. J. The word *Success*. For packing.
 48,202. Boston Belting Co., Boston, Mass. The word *Eelskin* over a representation of an eel in an oval. For textile belting.
 51,521. Hood Rubber Co., East Watertown, Mass. The word *Dixie*. For footwear.

ISSUED APRIL 25, 1911.

- 990,214. Tire. E. P. Beach, Freehold, N. J.
 990,350. Tire. S. Ziana de Ferranti, Grindleford, England.
 990,387. Tire remover. S. C. Plant, Brookline, Mass.
 990,392. Tire building machine. R. Rowley, New York.
 990,456. Automobile tire. H. E. Rechner, East Toledo, Ohio.
 990,587. Rod packing. G. C. Potts and P. E. Weaver, Chicago, Ill.
 990,609. Automobile tire. G. E. Tomlinson, Winchester, Ky.
 990,649. Vehicle wheel. J. H. Hardwick, assignor of twenty-four-one-hundredths to J. C. McKenzie, and twenty-four-one-hundredths to J. L. Clark, all of Cleveland, Tenn.
 990,651. Wheel anti-skidder. H. Heer, Ogden, Kansas.
 990,664. Vehicle wheel tire. H. Mulholland, New York.
 990,788. Resilient wheel. W. J. Smith, assignor of one-half to W. S. Hennessy, Jr., both of Boston, Mass.
Designs.
 41,330. Hoof pad. E. A. J. Leahy, assignor to Regal Hoof Pad Co., both of New York.

Trade Marks.

- 49,890. The Canfield Rubber Co., Bridgeport, Conn. The word *Redtex*. For plumber's rubber goods.

[NOTE.—Printed copies of specifications of United States patents may be obtained from THE INDIA RUBBER WORLD office at ten cents each postpaid.]

GREAT BRITAIN AND IRELAND.

PATENT SPECIFICATIONS PUBLISHED.

The number given is that assigned to the Patent at the filing of the application, which in the case of these listed below was in 1909.

*Denotes Patents for American Inventions.

- [ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, APRIL 5, 1911.]
 28,483 (1909). Vehicle wheel tires. L. Liais, Paris, France.
 28,485 (1909). Pneumatic for soles. E. Maddocks and J. McNair, Toronto, Canada.
 28,593 (1909). Typewriters; plastic composition. W. Fairweather, London.
 28,613 (1909). Artificial india-rubber. A. A. W. Grist, London.
 28,622 (1909). Rubber sole for boots, etc. L. W. Dash, London.
 28,662 (1909). Vehicle wheels. T. E. Bridgman, Swansea, Wales.
 28,674 (1909). Vehicle wheels. C. H. Thompson, Amblecote, Stourbridge, Worcestershire.
 28,832 (1909). Vehicle wheel tires. E. L. Peraux, London.
 28,862 (1909). Vulcanizing india-rubber. A. Dales, Manchester.
 28,924 (1909). Rubber heel protectors. A. Roberts, London.
 28,965 (1909). Vehicle wheels. C. Burnett, Durham.
 29,030 (1909). Vehicle wheel tires. W. Frost, London.
 28,102 (1909). Vehicle wheel tires. G. K. Beldam, London.
 29,115 (1909). Vehicle wheel tires. W. von Nottbeck, St. Petersburg, Russia.
 [ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, APRIL 12, 1911.]
 29,359 (1909). Vehicle wheel tires. I. S. McGilham, London.
 29,395 (1909). Tapping rubber trees, etc. R. W. Cater and G. V. A. Schofield, London.
 29,410 (1909). Vehicle wheels. C. Lee, Birmingham.
 29,497 (1909). Vehicle wheel tires. P. Stephan, Krietern, near Breslau, Germany.
 29,614 (1909). Vehicle wheel tires. T. L. Bell, Wylam Northumberland, England.
 29,632 (1909). Vehicle wheel tires. H. Beien, Wald, Prussia.
 29,635 (1909). Vehicle wheel tires. J. G. A. Kitchen, Scotforth, Lancaster, and I. H. Storey, Loughrigg Brow, Ambleside, Westmoreland.
 [ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, APRIL 19, 1911.]
 25,330 (1909). Vehicle wheel tires. V. B. Hill, London.
 29,864 (1909). Devulcanizing rubber. C. Dreyfus, Claremont, Fallowfield; A. Friedl, Victoria Park, Manchester; W. H. Bentley, Irlam, Lancashire, and Clayton Aniline Co., Clayton, near Manchester.
 29,961 (1909). Lasting boots, etc. J. Party, Paris, France.
 30,129 (1909). Vehicle wheel tires. J. Bloomfield, and J. Cracknell, Beccles, Suffolk.
 30,146 (1909). Vehicle wheels. A. E. J. Smith, London.
 30,274 (1909). Tire valves. North British Rubber Co., and A. Johnson, Edinburgh, Scotland.
 30,300 (1909). Vehicle wheel tires. J. A. Legh, Ambleside, Westmoreland.
 30,489 (1909). Vehicle wheel tires. R. K. Evans, London.
 30,499 (1909). Vehicle wheels. H. Pataud, Paris, France.
 *30,513 (1909). Vehicle wheels. A. Dow, New York.

- [ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, APRIL 26, 1911.]
 169 (1910). Vehicle wheels. T. R. Shelley, Birmingham.
 259 (1910). Wheel tires. A. E. Walkden, Liscard, Cheshire.
 341 (1910). Drying sheet rubber, etc. T. Cockerill, Colombo, Ceylon.

THE FRENCH REPUBLIC.

PATENTS ISSUED (with Dates of Application).

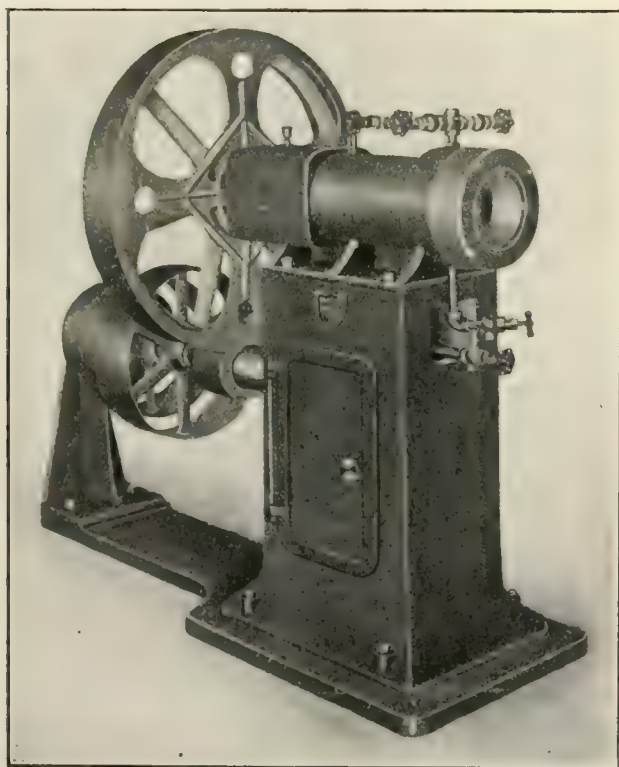
- 421,650 (October 20, 1910). Wilhelm Pahl. Process for coagulating the lactiferous sap or latex of caoutchouciferous plants.
 421,688 (October 5). A. Deflotrieve. New pneumatic casing for automobiles, carriages, etc.
 421,698 (October 18). H. Pont. Imperforable protector for pneumatic tires.
 421,739 (October 22). L. David. Pneumatic tire, with casing attached by air pressure, independent from that in the inner tube.
 421,775 (October 24). J. Brown. Improvement in tires for vehicle wheels.
 421,816 (October 25). J. Guerrero. Elastic tire for vehicle wheels.
 421,932 (October 28). C. M. Gautier. Improvements applied to machines employed in the manufacture of tires and wheels.
 421,935 (January 5). T. Gratioux, fils. Process of manufacturing tight gas tubes, made with a flexible metallic tube, enveloped in a rubber covering.
 421,945 (October 28). Société Charles Harti, père et fils. Elastic and adjustable retaining ring for braces, stocking suspenders and other purposes.
 422,008 (January 8). C. Damian and E. Porteret. Non-skidding tire for wheels of vehicles.
 422,052 (November 2). J. G. A. Kitchen and J. H. Storey. Pneumatic tire.
 422,057 (November 2). F. Rosdorff. Protective casing for pneumatic tires.

- 422,118 (January 11). H. Dogny and V. Henri. Process of manufacturing spongy rubber.
- 422,171 (October 22). G. V. de Luca. Improvements applied to pneumatic tires.
- 422,246 (November 3). J. Stercka. process of strengthening ebonite or hard rubber, so as to make it unbreakable.
- 422,262 (November 7). A. Turnbull. Wheel and auxiliary tire for vehicles.
- 422,274 (November 7). F. Lissner. Armor for casing of pneumatic tire.
- 422,310 (November 8). C. H. Genth. Elastic tire for vehicle wheels.
- 422,332 (November 5). T. L. Lafoy. Pneumatic tire for wheels.
- 422,342 (November 9). Society entitled The Crude Rubber Washing Company, Limited, and Messrs. Dessau. Apparatus for eliminating foreign substances from caoutchouc, gutta-percha, balata and other analogous substances.
- 422,346 (November 11). Society entitled The Crude Rubber Washing Co., Limited, and Messrs. Dessau. Apparatus for removing foreign substances from caoutchouc, gutta-percha, balata and other similar substances.

[NOTE: Printed copies of specifications of French patents can be obtained from R. Robet, Ingénieur-Conseil, 16 avenue de Villier, Paris, at 50 cents each, postpaid.]

IMPROVED RUBBER TUBING MACHINE.

THE machine illustrated herewith may be used for making a great variety of rubber goods, including carriage tires, hose and for the preparation of stock for moulded goods. Very compact and rigid and self-contained, it stands on a single, solid-base plate, so that perfect alignment is assured.



RUBBER TUBING MACHINE.

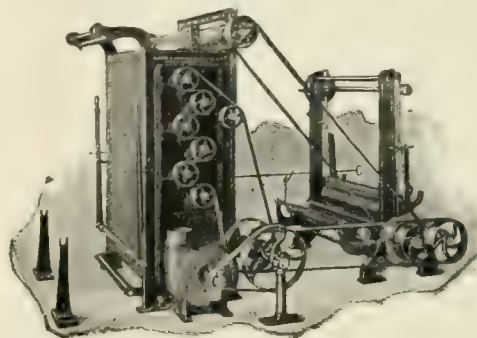
The gears are machine cut, the pinion of steel and the large wheel cast iron. The thrust from the screw, acts directly against a head which is bolted fast to the cylinder of the machine and having between the screw and the head a disc of steel and bronze, which enables it to stand any pressure without heating. The cylinder is equipped with a liner of cast iron, which, when worn too large, can easily be replaced. Ample provision is made for steam and hot water circulation around the screw in the cylinder and the temperature of either end of the cylinder can be kept independent of the other. The machine is built in three sizes; the diameter of the smallest size screw is $3\frac{1}{8}$ inches, the second size $4\frac{1}{2}$ inches, and the largest size 6 inches. [Trenton Machine Specialty Co., Trenton, New Jersey.]

PARA RUBBER SEED OIL.

In a letter to the Planters' Association of Ceylon, Professor Dunstan, of the British Imperial Institute, calls the attention of that body to the favorable opportunity that presents itself just now for placing supplies of Pará rubber seed kernels or oil on the European market. In his communication, he points out that the oil in question is suitable for use as a drying oil, to replace linseed oil and similar drying oils, the prices of which have been rising steadily of late and that while the Pará rubber seed oil would fetch about the same price, or perhaps a little less than the linseed oil, the seed from which it is extracted would be enhanced in value beyond present prices. The association is requested to furnish information in regard to the possibility of obtaining a steady and sufficient supply of the seed.

A VERTICAL BRUSHING MACHINE.

COMPACT, simple and efficient, the patent vertical brusher, illustrated herewith, is a machine the utility of which will appeal to manufacturers of coated or water-proofed fabrics. It is built with six cylindrical brushes, filled with stiff bristles and so arranged that in passing vertically upward, between them, the fabric is exposed to the active brushing effect of three brushes



HEATH PATENT VERTICAL BRUSHER.

on each side. If desired, steel bladed beaters or other cleaning appliances may be used in place of some of the brushes. For each brush, a dust chute is provided, through which, without again coming in contact with the fabric under treatment or the other brushes, the dust, lint, etc., is conducted into the dust receptacle in the base of the machine, an air exhaust fan, connected with the dust chutes, expediting its removal.

The machine does good work by brushing and cleansing the surfaces to be coated, on both sides, brushing coated goods in connection with starch, cleaning cotton liners of soap-stone, etc., and general brush-finishing. The machine may be run in connection with calender rolling machines as shown in illustration, if tight hard rolls are needed, or provided with an ordinary rolling up device. If it is only used to lay the goods off in loose folds an overhead folding attachment may be used. The machines built in various sizes as required. [Curtis & Marble Machine Company, Worcester, Massachusetts.]

CELLON—A NEW PRODUCT.

CELLON is perhaps not exactly new in Europe as at least two companies are said to be turning out goods. It, however, has only appeared in sample form in the United States. It is as the name indicates, a cellulose product, but radically different in form from celluloid, acetyl cellulose, etc. In block or sheet form it equals the best celluloid products and is non-inflammable. As its cost in this form is high that will probably not be its first line of commercial development. In solutions, however, it seems to have a very wide field of application. For example, in proofing leather it does away with the troublesome necessity of using castor oil and one coating of it is said to equal ten of celluloid.

United States Rubber Co.

ON May 16 the nineteenth annual meeting of the United States Rubber Co. was held at the company's registered offices at New Brunswick, New Jersey. The annual reports of the officers, which were read and approved and are herewith reproduced, indicate the company's operations and its present condition.

REPORT OF PRESIDENT COLT.

TO THE STOCKHOLDERS OF THE UNITED STATES RUBBER CO.—The operations of the company during the past year show a net profit less than that in the preceding year. This is due to the decline in general business during the last six months to the mildness of the winter, and to the erratic fluctuations in the price of crude rubber, which, since April 1, 1910, has fallen almost one-half, necessitating inventory valuation below cost, not only of crude rubber in stock but also of manufactured goods carried over.

The report of the treasurer appended hereto gives the Consolidated General Balance Sheet and the Consolidated Income Statement of the United States Rubber Co. for the fiscal year ending March 31, 1911.

The operations of the Rubbers Goods Manufacturing Co., the Canadian Consolidated Rubber Co., Limited, the General Rubber Co., and a mechanical company, are not included in the Treasurer's Report, but only the sums received by way of dividends declared upon the United States Rubber Co.'s stock interest therein. The share of the undivided earnings of such companies for the year which appertain to such stock interest is computed to be \$1,312,166.11.

VOLUME OF BUSINESS.

The aggregate net sales of the company for the year were \$40,888,724.25 as against \$38,711,051.43 in the previous year, an increase of \$2,177,672.82.

PROFITS.

The net profits for the year, after adjusting inventories to correspond to the lower level of crude rubber, are \$4,349,825.73 as compared with \$5,535,163.15 the previous year, showing a decrease of \$1,185,337.42. Should we add to these net profits \$1,312,166.11, the company's estimated share in the undivided profits of the companies in which it is a stockholder, which, as above mentioned, are not included in the Consolidated Statement, the profits for the year would be \$5,661,991.84 as against \$7,235,000 upon a similar estimate for the preceding year. The company's profit is reached after deducting all interest charges, including coupons on the \$19,000,000 outstanding funded debt.

EXPORT BUSINESS.

The year's experience has justified last year's expectation of growth in the export business of the company, such sales for the past year having been larger than in any previous year.

RUBBER GOODS MANUFACTURING CO.

The sales of the Rubber Goods Manufacturing Co. for its last fiscal year were \$35,188,295.40 as against \$25,629,592.71 the previous year, this increase being mainly in tires. The net profits were \$2,122,247.62 as compared with \$2,369,971.61 net profits the previous year. The profits would have increased substantially in proportion to the sales had it not been for the reduction in inventory values necessitated by the lower level of crude rubber.

TIRES.

Recently the distribution of tires manufactured by our companies has been consolidated through the organization of the "United States Tire Co.," which company hereafter will market the "Continental," the "G & J," the "Hartford" and the "Morgan & Wright" tires. This action was taken after much consideration on the part of the president and directors of the Rubber Goods Co. It is believed that it will prove highly advantageous in the future development of this important branch of the rubber business and that it will place the United States Rubber Co., through the United States Tire Co., in the front rank as the largest manufacturer and distributor of rubber tires in the world.

The company has recently leased for a long term of years the premises on the southeast corner of Broadway and Fifty-eighth street, New York, containing 10,638 square feet of land upon which a building is to be erected, the primary object of which is to obtain adequate facilities for the tire business of the company, the probability being that the principal offices of the company and its subsidiary companies will also be transferred to



COLONEL SAMUEL P. COLT.

[President United States Rubber Co.]

this new building when it is completed.

CRUDE RUBBER.

The fluctuations in crude rubber have been violent during the year. At the beginning of the year (April 1, 1910) the price of fine Pará was \$2.73 a pound, while at the end (March 31, 1911) it was \$1.43, it having sold in the meantime as high as \$3. and as low as \$1.13.

With a view of relieving our company from the future necessity of purchasing crude rubber at a market price which, though sometimes the result of supply and demand, not infrequently is that of manipulation, your directors have taken further steps during the year toward ourselves producing a substantial part of our requirements of crude rubber, and to this end have made additional investments in the Far East.

REVIEW OF BUSINESS FOR PAST TEN YEARS.

As it is now ten years since your president's first election to that office, a brief review of what has been accomplished during that period may be of interest to our stockholders.

At the beginning (May, 1901) the company's surplus was nominal, dividends had stopped on all issues of stock, the entire volume of business was but about one-quarter of the entire volume at the present time, and the earnings were small. Four-fifths of the product of the company was boots and shoes; the larger part being sold to jobbers. The "Property and Plant" account of the company was \$47,323,355.77, and the capital stock was \$47,191,500. For the year ending April 1, 1901, the net sales of the company were \$20,853,633.94; and the market price of its preferred stock was 59 and of its common stock 21.

The continuance of the company only as a boot and shoe company, with its then volume of business and then amount of capital stock, would have afforded little satisfaction or encouragement.

The consumption of rubber boots and shoes in the United States has not increased during the past ten years in proportion to the increase in population. This result has been attributed to (1) improved methods for the speedy removal of snow from the sidewalks and streets of the large cities and towns, (2) facilities afforded for travel by suburban street railways, (3) higher selling prices for goods the past three years, necessitated by higher cost of crude rubber.

In April, 1904, the volume of business and profits had grown to a point where your directors felt justified in resuming the payment of dividends upon the preferred stock, and, as stated, in the President's Annual Report for that year:

"This step was not taken without the firm conviction on the part of your directors that the company would be able to continue quarterly dividends hereafter."

In the Annual Report of 1905, under the heading of "Dividends," your president made the following reference to the subject:

"and your directors felt it unwise to resume dividends until they could feel morally certain of maintaining them."

At about this date it became apparent to your directors that in the establishment of agencies for the sale of rubber boots and shoes it was manifest that other lines of rubber goods could be distributed through such agencies with economy to both, and also that rubber tires, which five years before were of comparatively little consequence, were becoming a most important article of rubber manufacture. Consequently it was deemed desirable to take steps to meet these conditions through the acquisition of successful concerns in these lines of business, the most important being the purchase by the company of the stock of the Rubber Goods Manufacturing Co. This was accomplished in 1905 through the purchase of the larger part of the Rubber Goods preferred stock by the issue of the first preferred stock of the United States Rubber Co., share for share, and the purchase of two shares of the Rubber Goods common stock for one share of 6 per cent. second preferred stock of the United States Rubber Co. This acquisition, in the opinion of your president, while fair at the time to the stockholders of both companies, has proved of great advantage, and, also, in his opinion, promises to prove of still greater advantage to the stockholders of the United States Rubber Co.

During this past year the volume of business of the Rubber Goods Co. was greater than that of all of the subsidiary companies of the United States Rubber Co. in the year 1905.

The rubber business of Canada having been in somewhat close association with the rubber business of the United States and the principal companies there under the guidance of Mr. D. Lorne McGibbon having been consolidated, early in 1907 the opportunity presented itself for the United States Rubber Co. to acquire, on what has proved to be a most favorable basis, much more than a controlling interest in the Canadian Consolidated companies.

Canada, as is well known, is not only a prosperous and growing country, but owing to its climate offers an exceptional

field for the consumption of rubber boots and shoes. Practically all lines of rubber goods, including tires, are manufactured by the Canadian Consolidated Rubber Co.

In July, 1908, the death of Mr. Charles H. Dale, the president and the practical head of the Rubber Goods Manufacturing Co., imposed upon your directors the difficult task of seeking and finding an experienced successor competent to develop and conduct the growing business of that company, and especially its tire business. Upon investigation it became apparent that it was most desirable to obtain the services of Mr. Elisha S. Williams for this important position. His record with the Revere Rubber Co. was proof of his ability, and in December, 1909, in the course of the negotiations with Mr. Williams it developed that the only way of obtaining his services was by acquiring the Revere Rubber Co. itself, a successful concern manufacturing the "Continental" tires, in addition to a general line of rubber goods. This was accomplished and on January 5, 1910, Mr. Williams became president of the Rubber Goods Manufacturing Co., all to the advantage of your company fully to the extent anticipated in the last annual report.

An analysis of the business and the earnings of the year just closed indicates that the volume of business of the property of the United States Rubber Co. acquired prior to April 1, 1905, was \$31,868,839.52, and that the volume of business of the properties acquired since April 1, 1905, was \$52,142,958.21. Basing the calculation upon the cost of these latter properties, the percentum of profit on this business for the year just closed was more than twice as large as the percentum of profit made in the same year upon the business of the properties purchased prior to April 1, 1905, estimated upon a like basis.

It will be observed that in the acquisition of the various properties since April, 1905, no common stock has been put out. The small increase in the common stock from \$23,666,000 to \$25,000,000 is represented by common stock issued at full face value for actual property purchased from the Meyer Rubber Co., a subsidiary of the United States Rubber Co.

The question of the payment of dividends upon the common stock of the company and of the making of quarterly reports of earnings to the stockholders are subjects that have received much consideration from the directors. As to the matter of reports, I would say that it is the desire of your directors to give to the stockholders information as to the business of the company which shall be not only full, but trustworthy. Our boot and shoe business is a season's business which renders it difficult to make any subdivided estimate of the year's profits which will not be misleading. From July, 1906, to April, 1908, at each quarterly divided period an estimate of the quarterly earnings was given, and was discontinued only because of complaints that it was misleading. It is still the wish of the management, if practicable, to make quarterly statements and the same will be done when the method can be wisely worked out.

As to the business policy pursued during the past ten years in the enlargement of the scope of our operations as above indicated, in the retention in the business of reasonable surplus reserves not only to strengthen the financial condition, but to fortify the value of its common stock, rather than weaken the company by the division of such surplus earnings by way of dividends to the common stock, it would seem that conservative investors naturally must be of the same approving mind as the great body of the stockholders. From time to time this general policy has been set forth in the annual reports to the stockholders and has received their approval. In the report of 1906 it was summarized as follows:

"It has been the policy of the directors to strengthen the company by adding to its surplus and by improving its efficiency in order to give assurance of the continuance of dividends upon its preferred stock before the resumption of dividends upon the common stock, it being believed that in the end this conserva-

tive policy will result to the best interests of ALL the stockholders.

"It is to be desired that in industrial properties there shall be established stability and regularity of dividends, such as obtain in the best railway properties. . . . Upon such considerations, it has seemed conservative and just to defer dividends upon the common stock at least until such time as the management shall be reasonably satisfied that, having begun their payment, the same can be maintained, although—even without present dividends in cash, the common stock, by enhancement of value through accumulation of surplus, will have shared in the prosperity of the company."

The report of 1910 contained the following:

"The earnings of the company the past year, considered by themselves, would seem to warrant some division to the common stockholders, and were it not for the abnormally high price of crude rubber existing, and the consequent requirement of a much larger sum of money to purchase and carry the same, your president would feel warranted in recommending a dividend upon the common stock at the present time."

Had the conditions of business and profits at the close of this last year been as flattering as at the close of the preceding year, and if uncertainties affecting the legal status of consolidations had been dissipated, your president would have had no hesitancy now, with the present lower level of crude rubber, in recommending a dividend upon the common stock, and he believes that the day cannot be far distant when all the conditions will be such as to warrant some material recognition of our common stockholders. Respectfully submitted,

SAMUEL P. COLT, *President*.

TREASURER'S REPORT.

UNITED STATES RUBBER CO. AND SUBSIDIARY COMPANIES.

[Not including Assets or Liabilities of Rubber Goods Manufacturing Co. and certain other Companies owned in part by United States Rubber Co.]

CONSOLIDATED GENERAL BALANCE SHEET, MARCH 31, 1911.

ASSETS.

Property and plants (including shares of R. G. M. Co., Canadian Consolidated Rubber Co., Ltd., and Revere Rubber Co.)	\$84,622,399.07
Inventories, manufactured goods and materials	\$17,474,148.40
Cash	3,244,947.07
Bills and Loans receivable	1,755,996.28
Accounts receivable	11,052,140.18
Stock owned in General Rubber Co.	2,000,000.00
Securities, including stock of U. S. R. Co., held by a subsidiary company	3,031,939.90
Miscellaneous assets	119,850.12
	<hr/>
Total assets	\$123,301,421.02

LIABILITIES.

Capital stock, first preferred	\$40,000,000.00
Capital stock, second preferred	10,000,000.00
Capital stock, common	25,000,000.00
	<hr/>
Ten-year 6 per cent. collateral trust sinking fund gold bonds*	\$19,000,000.00
Loans and notes payable	\$4,917,877.55
Merchandise accounts payable	837,335.18
Accrued interest, taxes, etc.	400,213.34
Due General Rubber Company	5,211,722.55
	<hr/>
Reserve for contingencies	500,000.00
Reserve for dividends	950,000.00
Fixed surpluses (subsidiary companies)	8,134,849.37
Surplus	8,349,423.03
Total liabilities	\$123,301,421.02

The contingent liabilities for certain guarantees, which are offset by corresponding contingent assets, are not included.

*1,000,000 of the original issue of \$20,000,000 bonds have been cancelled under Sinking Fund provision.

CONSOLIDATED INCOME STATEMENT FOR YEAR ENDING MARCH 31, 1911.

Gross sales, boots and shoes and miscellaneous	\$54,751,939.13
Net sales, boots and shoes and miscellaneous	\$40,888,724.25
Cost of goods sold	33,685,139.55
	<hr/>
Manufacturing profits	\$7,203,584.70
Freight, taxes, insurance, general and selling expenses	2,091,742.19
	<hr/>
Operating profits	\$5,111,842.51
Other income (net), including dividends received on stock of certain other companies owned by U. S. R. Co.	1,485,846.66
	<hr/>
Total income	\$6,597,689.17
LESS:	
Interest on bonds and borrowed money	\$1,261,381.30
Interest allowed customers for pre-payments	552,033.61
	<hr/>
	1,813,414.91
Net income	\$4,784,274.26
Deductions for bad debts, etc.	47,623.67
	<hr/>
Profits	\$4,736,650.59
Depreciation of merchandise	386,824.86
	<hr/>
Net profits	\$4,349,825.73
Dividends	3,800,000.00
	<hr/>
Surplus for period	\$549,825.73
Surplus April 1, 1910	7,799,597.30
	<hr/>
Surplus March 31, 1911	\$8,349,423.03

Respectfully submitted,

JAMES B. FORD, *Treasurer*.

The certificate of audit of the company's accounts, signed by Haskens & Sells, certified accountants, accompanies the foregoing statements.

THE ANNUAL ELECTION.

THERE was no change made in the directorate of the company, the board being re-elected and consisting, as last year, of the following members:

Walter S. Ballou,	Henry L. Hotchkiss,
E. C. Benedict,	Arthur L. Kelley,
Anthony N. Brady,	Lester Leland,
Samuel P. Colt,	D. Lorne McGibbon,
Harry E. Converse,	Edward R. Rice,
James Deshler,	Homer E. Sawyer,
James B. Ford,	Frederick M. Shepard,
J. Howard Ford,	William H. Truesdale,
Frank S. Hastings,	John D. Vermeule,
Francis L. Hine,	Elisha S. Williams.

The board of directors at a subsequent meeting, organized and re-elected last year's officers, as follows:

President—SAMUEL P. COLT,
Vice President—JAMES B. FORD,
Second Vice President—LESTER LELAND,
Treasurer—JAMES B. FORD,
Assistant Treasurer—W. G. PARSONS,
Secretary—SAMUEL NORRIS,
Assistant Secretary—JOHN D. CARBERRY,
General Manager—HOMER E. SAWYER.
Executive Committee—Samuel B. Colt, James B. Ford, Lester Leland, E. C. Benedict, Walter S. Ballou, Anthony N. Brady and John Watson, Jr.

BUSINESS OF THE COMPANY.

THE following table, showing the amount of net profits of the United States Rubber Co. and the amounts disbursed in dividends since the organization of the company, has been

compiled from the printed reports of the successive treasurers of the corporation:

YEAR ENDING—	Net Profits.	Dividends.
March 31, 1893.....	[Not Published]	
March 31, 1894.....	[Not Published]	
March 31, 1895.....	\$2,716,370.00	\$2,056,190.00
March 31, 1896.....	2,339,790.60	1,552,040.00
March 31, 1897.....	1,999,611.34	1,552,040.00
March 31, 1898.....	2,070,750.41	1,552,040.00
March 31, 1899.....	3,226,513.46	1,882,040.00
March 31, 1900.....	3,007,887.54	2,828,680.00
March 31, 1901.....	62,605.57	705,765.00
March 31, 1902.....	deficit	none
March 31, 1903.....	1,594,908.16	none
March 31, 1904.....	1,575,641.29	none
March 31, 1905.....	3,761,922.63	1,882,040.00
March 31, 1906.....	3,881,270.23	2,846,092.00
March 31, 1907.....	4,590,382.72	3,485,956.00
March 31, 1908.....	3,553,556.14	3,495,448.00
March 31, 1909.....	4,507,655.39	3,498,940.00
March 31, 1910.....	5,535,163.15	3,574,205.00
March 31, 1911.....	4,349,825.73	3,800,000.00

CANADIAN CONSOLIDATED RUBBER CO., LIMITED.

THE financial condition of the above company, as for the year ending December 31, 1910, is shown as follows

ASSETS.	
Cash	\$1,570.32
Accounts receivable	245,835.44
Furniture and Fixtures.....	6,595.86
Equipment	567.00
Patents	47.50
Merchandise	4,492.68
Investment in capital stock of subsidiary rubber and felt companies	7,354,401.00
Total	\$7,613,510.30

LIABILITIES.	
Accounts payable	1,166.22
Six per cent bonds:	
Authorized	\$2,600,000.00
Less unissued	20,400.00
Preferred capital stock:	
Issued	1,980,000.00
Less in trust (Royal Trust Co.)....	7,140.00
Common capital stock:	
Issued	2,805,500.00
Less in trust (Royal Trust Co.)....	3,060.00
Total	\$7,356,066.22
Balance profit and loss to 1911	257,444.08

PROFIT AND LOSS ACCOUNT.

By balance brought forward.....	\$76,700.44
By surplus from felt stock.....	\$1.00
By dividends from subsidiary companies	325,401.25
By revenue from other sources	351,179.18
Total	\$751,281.87

To bond interest	\$153,039.00
To preferred stock dividend	137,530.75
To common stock dividend.....	111,930.00
To expense	91,338.04
Total	493,837.79

Surplus

The complete list of officers for the current year is as follows:

President—D. LORNE MCGIBBON.
 Vice President—J. H. McKECHNIE.
 Vice President—Geo. W. STEPHENS.
 Vice President—T. H. RIEDER.
 Vice President—F. H. WARD.
 Secretary-Treasurer—WALTER BINMORE.
 Assistant Treasurer—LEONARD D. SHAW.
 Assistant Secretary—C. H. ANCRUM.

DIRECTORS.—D. Lorne McGibbon, J. H. McKechnie, Geo. W. Stephens, T. H. Rieder, F. H. Ward, Alexander Pringle, Shirley Ogilvie, Victor E. Mitchell, E. W. Nesbitt, Duncan Coulson, W. R. Allan.

COMPRESSED AIR VULCANIZING PRESSES.

RUBBER manufacturers are generally familiar with the various uses for which compressed air is used in the manufacture of rubber goods. The writer of this article, however, has made use of it in an entirely different manner to any with which he has been familiar and that is for operating small vulcanizing presses instead of hydraulic or hand-power. It was discovered by him that not a great amount of pressure was necessary in the manufacture of practically all moulded goods, but that continuous pressure was necessary and that presses operated by compressed air fitted up with a ram of the right size and properly piped could be used with greater success than water, and the results were far superior. This use is, I believe, entirely new and has many advantages over water; first, in its greater simplicity in piping because ordinary pipe of small size only is necessary and it does not require special valves, which frequently leak and cause great loss in spoiled goods, while with my method it is true the air is wasted, which could probably be saved if necessary. It has been my custom to simply close the inlet valve and open the relief valve and the air is discharged directly into the atmosphere; second, the speed at which these presses can be operated greatly increases the output because the release is instantaneous and the press drops quickly and, in the hands of the expert, silently. It also rises with much greater rapidity than the hydraulic press; third, a leak can be instantly detected and remedied, which is hydraulic presses is not the case. It only requires from ninety to one-hundred pounds pressure to give satisfactory results. I have used for this purpose a large sized locomotive air pump, but an air compressor is much better. Better results are also obtained if a large receiver is used. A typical size for use where 10 to 25 presses are used would be 20 ft. long x 5 ft. diameter. So far as I have gone into this matter I believe there is much greater latitude in the number of presses to be operated by one unit of power than is true in hydraulic presses, as I have used as high as 30 presses on one unit in addition to furnishing from the same source all of the air required by a large plant, making hose and tires where a large amount of air is used, as is generally known.

To sum up the advantages of an air press would result about as follows: Greater simplicity in piping, which means a saving in the first cost of installation; greater margin of saving in manufacture, larger output and much greater cleanliness in that there is no water from leaking hydraulic valves or pipes.

W. D.

INDIA-RUBBER GOODS IN COMMERCE.

EXPORTS FROM THE UNITED STATES.

OFFICIAL statement of values of exports of manufacturers of india-rubber and gutta-percha for the month of March, 1911 and the first nine months of five fiscal years, beginning July 1:

MONTHS.	Belting, Packing and Hose.	Boots and Shoes.	All Other Rubber.	TOTAL.
March, 1911.....	\$157,915	\$102,606	\$576,138	\$836,659
July-February	1,354,060	1,699,371	3,899,406	6,952,837
Total, 1910-11.....	\$1,511,975	\$1,801,977	\$4,485,644	\$7,789,496
Total, 1909-10.....	1,416,655	1,499,770	3,510,618	6,427,043
Total, 1908-09.....	1,053,758	1,071,489	2,805,914	4,931,161
Total, 1907-08.....	1,040,985	1,342,965	2,802,371	5,186,321
Total, 1906-07.....	914,276	962,964	2,664,967	4,542,207

THE above heading "All Other Rubber," for the last nine months, includes the following details relating to Tires:

MONTHS.	For Automobiles.	All Other.	TOTAL.
March, 1911.....	values \$131,183	\$43,772	\$174,955
July-February	1,194,720	368,029	1,562,749
Total, 1910-11.....	\$1,325,903	\$411,801	\$1,737,704

Rubber Goods Manufacturing Co.'s Twelfth Annual.

ON APRIL 13, 1911, the Rubber Goods Manufacturing Co. held its twelfth annual meeting, at the registered offices of the company, in Jersey City. The president presented the following report:

In submitting the twelfth annual report of the company, your president would call attention to the fact that during the past fiscal year we have had to contend with most trying conditions in the crude rubber market, due to the unprecedented range in prices.

In January, 1910, Upriver fine Pará rubber was \$1.75 per pound. During the year 1910 it sold as high as \$3 per pound, with frequent and marked intervening fluctuations. Finally at the end of our fiscal year, December, 1910, it had declined to \$1.35 per pound. These conditions made business operations unusually difficult.

Nevertheless, our volume of trade greatly increased. Indeed, it surpassed all previous years. The net earnings would undoubtedly have increased in proportion but for the great shrinkage in inventoried values due to the comparatively low price of crude rubber in December, 1910, and our action based upon our feeling that a conservative policy required a very considerable mark-down in our inventory of raw material and manufactured goods.

During the past year much thought has been given to the subject of how most economically and effectively to manufacture and market the large product of our four tire companies, which resulted in the organization of the "United States Tire Co.," through which new company, on March 1, 1911, we commenced to sell the entire production of "Continental," "G. & J.," "Hartford" and "Morgan & Wright" tires. Much progress is being made on similar lines in factory operations, and it is anticipated that great benefits will be derived from this action in the near future. Our entire sales force is enthusiastically promoting the sale of all brands of tires of our manufacture, and a large and healthy increase in business may be expected from this concentration of the tire sales department.

Particular care and attention has been given to maintaining the plants in a condition of highest efficiency; extensive improvements having been made at several of our factories during the past year.

The treasurer's report of the financial condition of the company and of the operations for the fiscal year is appended.

Respectfully submitted,

ELISHA S. WILLIAMS,
President.

TREASURER'S REPORT.

CONSOLIDATED GENERAL BALANCE SHEET, DECEMBER 31, 1910.

ASSETS.	
Property, plants and investments....	\$25,449,285.63
Patents and trademarks	2,312,121.32
Inventories, mf'd goods and materials, \$13,844,877.63	
Cash	1,938,094.27
Bills and accounts receivable.....	3,853,620.23
	19,636,592.13
Securities owned	\$6,780.00
Stock owned in General Rubber Co....	1,000,000.00
	1,006,780.00
Miscellaneous assets	301,461.01
Total assets	\$48,706,240.09

LIABILITIES.

Capital stock, preferred	\$10,351,400.00	
Capital stock, common	16,941,700.00	27,293,100.00
Bonds of Mechanical Rubber Co. and N. Y. Belting & Packing Co. (less amount owned)	980,010.00	
Sinking fund cash in hands of Trustee	206,005.62	774,004.38
Reserve for redemption of bonds....		661,979.84
Bills and accounts payable.....		10,666,068.54
Reserve for new construction and plant repairs		231,000.00
Reserve for Federal excise tax.....		22,337.01
Fixed surplus (subsidiary companies)		2,499,218.65
Surplus		6,558,531.67
Total liabilities		\$48,706,240.09

Of the above "surplus," \$135,767.89 would represent the ratable interest therein of minority stockholders as compared with that of the Rubber Goods Manufacturing Co.

Contingent liabilities for certain guarantees which are offset by corresponding contingent assets, are not included.

CONSOLIDATED SUMMARY OF INCOME AND PROFIT AND LOSS FOR YEAR ENDED DECEMBER, 31, 1910.

Net sales	\$35,188,295.40
Earnings of subsidiary companies	\$2,169,326.22
Income from investments	100,000.00
	\$2,269,326.22
LESS:	
Expenses of Home Office	147,078.60
Net profits	\$2,122,247.62
Dividends	\$989,994.00
Added to reserve for redemption of bonds	73,431.31
Adjustment of reserves for depreciation	2,157.87
	1,065,583.18
Surplus for the period	\$1,056,664.44
Surplus and working capital January 1, 1910	5,501,867.23
Surplus and working capital December 31, 1910	\$6,558,531.67

Respectfully submitted,

EDWARD J. HAWTHORNE,
Treasurer.

The following directors were elected for the current year:

Elisha S. Williams,	Ernest Hopkinson,
Anthony N. Brady,	Charles A. Hunter,
Samuel P. Colt,	Arthur L. Kelley,
Frank W. Eddy,	Lester Leland,
James B. Ford,	Homer E. Sawyer,

After organization, the board elected last years' officers, as follows:

President.—ELISHA S. WILLIAMS.

Vice Presidents.—LESTER LELAND and CHARLES A. HUNTER.

Treasurer.—E. J. HATHORNE.

Assistant Treasurer.—JOHN D. CARBERRY.

Secretary.—SAMUEL NORRIS.

Assistant Secretary.—JOHN D. CARBERRY.

Executive Committee.—Elisha S. Williams, Lester Leland, Anthony N. Brady, Samuel P. Colt, Ernest Hopkinson, Charles A. Hunter, and Homer E. Sawyer.

The following record of the volume of net sales by the Rubber Goods Manufacturing Co. and the subsidiary companies is compiled from the successive annual reports as published:

1900	\$13,364,090.00	1906	\$19,737,120.81
1901	14,348,046.00	1907	21,473,823.28
1902	13,999,329.00	1908	18,491,987.90
1903	14,310,752.00	1909	25,629,592.71
1904	14,556,289.00	1910	35,188,295.40
1905	17,662,453.00		

BUCHTEL COLLEGE RUBBER LABORATORY.

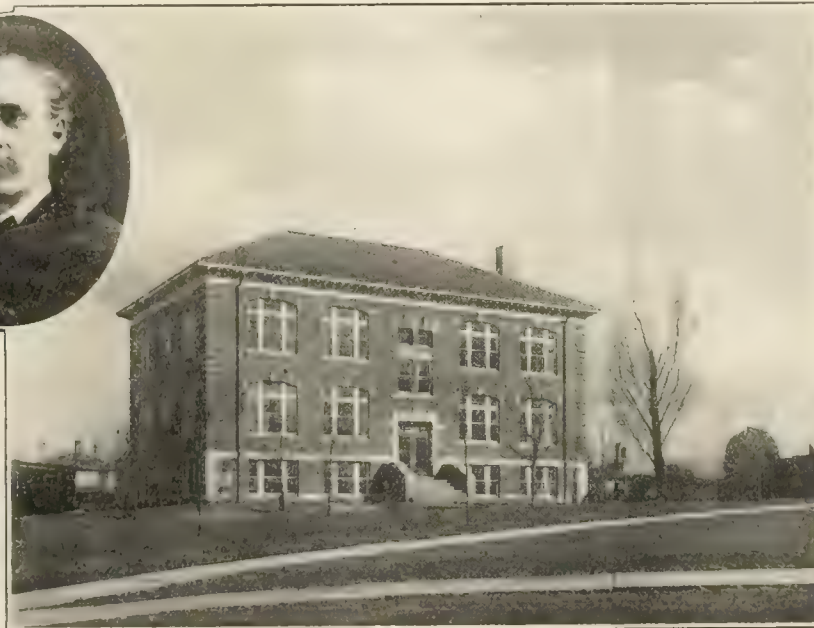
BUCHTEL College (Akron, Ohio), has what no other American school possesses—a complete working rubber laboratory. It is equipped with a full line of rubber machinery and students have the use of mixing mills, calender rolls, vulcanizers, as well as of the finely constructed and delicate apparatus used in the laboratory. The course is organic chemistry for a year, quantitative analysis for six months, with six months for a special course in chemistry.

During the first half year particular attention is given the experimental study of crude gum, covering the amount of moisture, foreign materials and resins, solvents of crude gums, the chemistry of colloids, constituents of rubber, action of haloids and sulphur upon rubber, theories of vulcanization, experiments upon vulcanization, chemical examination of sulphur carriers and compounds, used as "fillers," chemical analysis of cured rubbers, etc., etc.

During the second half year a comparative study is made of various methods for determining free and total sulphur, nature of the active extract, determination of fatty and other organic substitutes, a

study of reclaiming processes, the principles involved and efficiency in practice, chemical examination of samples of reclaimed stock, experiments in compounding, effects of compounds upon the character of the products, causes of deterioration of cured rubber.

The second year covers special work in research, depending on the particular field of chemical research and mechanical practice which the student desires to master. The course is wonderfully well arranged and of great value.



BUCHTEL COLLEGE, AKRON, OHIO, RUBBER LABORATORY.
Portrait of Dr. C. M. Knight, Dean of the Chemical Department.

THE FEDERAL RUBBER MANUFACTURING CO.

THIS company, which incorporated under the laws of the State of Wisconsin, starts with a capital of \$1,000,000, fully subscribed, and will manufacture mechanical goods and solid and pneumatic automobile and bicycle tires. It has purchased the present plant of the Federal Rubber Co., at Milwaukee, which is being rapidly remodeled and extended by Westinghouse-Church-Kerr Co., who have a contract for new buildings, power plant and machinery. B. C. Dowse, until lately president of the G & J Tire Co., will be the guiding spirit. The sales manager will be Herbert A. Githens, formerly manager of sales and general representative of the G & J Tire Co., for the United States Tire Co., who will also be vice-president, and who assumed his duties the middle of May. Richard Ward, formerly secretary and treasurer of the G & J Tire Co., will be secretary and treasurer of the Federal Rubber Manufacturing Co.

Replete with information for rubber manufacturers: Mr. Pearson's "Crude Rubber and Compounding Ingredients."

RUBBER RECLAIMERS' CLUB LUNCHEON.

A SPECIAL feature of the last meeting of the Rubber Reclaimers' Club, held on May 4, 1911, was an elaborate luncheon given by the club to members and their guests. This luncheon was given at the Hotel Belmont, New York City, at one o'clock, and the regular meeting of the club was held immediately afterward.

Beyond all question this was one of the most successful meetings the club has ever held, not only because of the number of members in attendance, but because of the social side of the meeting as well. The officers of the club were all present, Joseph F. McLean, president; Francis H. Appleton, treasurer, and R. W. Seabury, secretary, and they all took pains to see that the other members and their guests enjoyed themselves.

The luncheon itself was very satisfactory, and helped to divert the minds of the members from the price of old rubber boots and shoes and helped also to make some of the members of the club better acquainted with each other.

Among other gentlemen who helped to make this event so successful were A. D. Thornton, of the Canadian Consolidated Rubber Co.; Harold P. Fuller, of the E. H. Clapp Rubber Co., and the New Jersey Rubber Co.; Samuel H. Dodd, treasurer of the Pequannoc Rubber Co.; W. T. Rodenbach, of the United States Rubber Co.; Charles N. Downes and P. B. Price, of the Derby Rubber Co.; C. I. Wilson, of the Boston Woven Hose and Rubber Co.; Ira W. Henry, of the Bloomingdale Rubber Co.; H. R. Nason, of the Empire Rubber Manufacturing Co.; Charles Brock, of the Boonton Rubber Co.; John A. Norman, of the New York Rubber Reclaiming Co., and J. R. Trewin and

D. J. Price, of the Stockton Rubber Co.

The membership list of the Rubber Reclaimers' Club is constantly increasing, and it is hoped that eventually it will include all reclaimers of old rubber scrap, whether reclaiming for their own use or for the trade.

This club has been in existence for a number of years, and the meetings which it holds each month not only help its members but serve in the long run to benefit the trade as well.

ORGANIZED eight years ago by American business men doing business in the German Empire, carried on as an American Chamber of Commerce, with board of directors and committees, the American Association of Commerce and Trade, Berlin, is doing good work in promoting the interests of American manufacturers seeking trade with Germany. The work of the association extends over the entire United States and all Germany, and its secretary, Mr. George S. Atwood, will promptly respond to all enquiries looking to the extension of American trade with Germany.

The Maderos, Mexico and the Situation.

THE Maderos, who have come into special prominence the world over in connection with the recent revolution in Mexico, are a most interesting family. Their head, Don Evaristo Madero, who recently died in Los Angeles, California, was, during the early days of border warfare, very much of a leader of men, and is said to have had at one time 800 men under arms. He became an immense land owner, and it is said at the time of his death he was worth something like \$20,000,000.

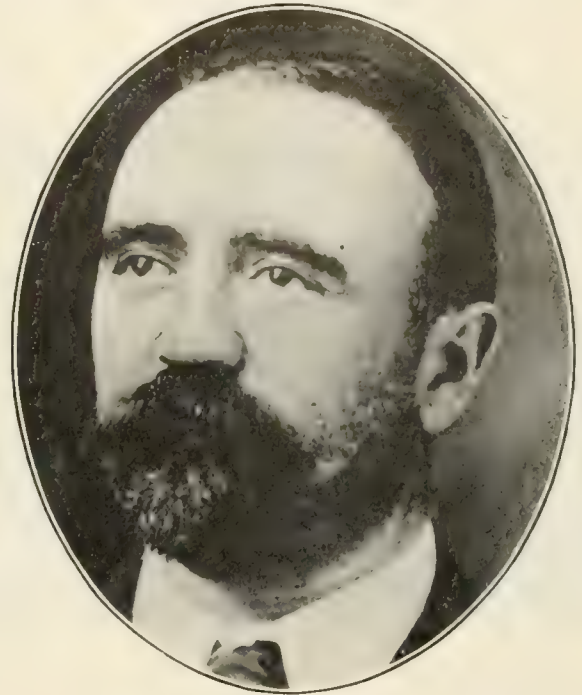
His sons, Francisco I. Madero and Ernesto Madero, are broadly educated, have held high diplomatic positions, and are thorough men of the world. The last named is slated for a cabinet position under the new regime. They are known to the rubber trade chiefly through their great holdings of land where the guayule shrub flourishes and by their various extracting plants for the manufacture of guayule rubber.

Francisco I. Madero, Jr., who announced himself provisional president and carried on a successful fight against the Diaz regime, is grandson to Don Evaristo. He is also a man of broad education, and has done what he believes to be his duty in bringing civil war upon his country. The Madero family have suffered much financial loss through the war, their various factories being closed, the laborers scattered, and as an act of reprisal the burning of the Madero factory at Parras, Coahuila, late this month. This factory was said to have an output of \$150,000 worth of guayule each month. A cotton mill also owned by the Maderos, with an output of \$200,000, was likewise destroyed.

It is to the credit of the revolutionists that business suffered so little, that trains ran so regularly, and that foreigners were so little molested during the long period of strife that now seems to be about over. The guayule factories shut down largely because there was no one to bring in shrub. So far there has been reported the destruction of only one plant, that cited above, which belonged to a Mexican. Down in the *Tierra Caliente*, where the *Castilloa* plantations are, things have gone along practically as if there were no war. One of our correspondents writes:

"The information we have been receiving right along from our plantations in Mexico would indicate that the newspaper reports regarding conditions down there are very much exaggerated. Everything is entirely quiet in our district and has

entirely with the government and not with the people or foreigners. I judge from the papers the last day or two that they



FRANCISCO MADERO.

[Courtesy of Hampton's Magazine, New York.]

[Photo furnished by George Grantham Bain, New York.]

are going to get their grievances settled, and that the country will settle down to its usual state of calm."

UNITED STATES STATISTICS TO MARCH 31, 1911.

IMPORTS.

	Year to June 30, 1910.		Nine Months ending March, 1911.	
	Pounds.	Value.	Pounds.	Value.
India-rubber	101,044,681	\$101,078,825	54,018,233	\$58,867,118
Guayule gum			16,428,288	8,749,655
Scrap rubber	37,364,671	2,998,697	21,532,916	1,902,556
Gutta-percha	784,501	167,873	920,068	227,222
Gutta jelutong (Pontianak)	52,392,444	2,419,223	40,149,482	2,240,292
Balata	399,003	196,878	591,699	409,698
Manufactures of india-rubber		1,154,347		654,488
Manufactures of gutta-percha		80,567		52,450
Total imports.....		\$108,096,410		\$73,103,479

EXPORTS.

	Year to June 30, 1910.		Nine Months ending March, 1911.	
	Pounds.	Value.	Pounds.	Value.
Scrap rubber	6,143,610	\$578,944	4,895,523	\$474,704
Reclaimed rubber	3,622,556	535,795	3,628,340	568,808
Manufactures of india-rubber and gutta-percha				
Beltting, packing and hose		1,960,825		1,511,975
Boots and shoes.....		1,984,739		1,801,977
Tires for automobiles.....				1,325,903
All other tires.....		5,115,331		411,801
All other manufactures.....				2,737,840
Total exports		\$10,175,634		\$8,833,008



PARRAS FACTORY OF THE CIA. EXPLORADORA, COAHUILENSE, S. A.

been. In Tabasco there was a company of insurgents who took peaceful possession of a number of towns and government offices, but they committed no depredations or seemed disposed to destroy anyone's property. Their grievances seem to be

The Rubber Planting Interest.

THE MANHATTAN PLANTING HEVEA.

THE Manhattan Rubber Mfg. Co. (Passaic, New Jersey) for years have been one of the most alert of American companies concerning the sources of crude rubber. Almost every year one of their officials has journeyed to Central America, to Africa or the Far East, and as a result they know much of



WEEDING ONE YEAR OLD TREES MANHATTAN PLANTATION.

rubber gathering and planting. They were one of the first to plant *Castilloa* and had not two successive cyclones seriously interfered with the perpendicularity of the trees would have won out. It is most interesting to know that far from being cast



FIVE YEAR OLD "HEVEAS" ON MANHATTAN PLANTATION.

down, as were their trees, they are the possessors of a large *Hevea* plantation in the Far East from which they are already getting shipments of rubber.

A BOOK for rubber planters—Mr. Pearson's "Rubber County of the Amazon."

THE UNITED SERDANG (SUMATRA) RUBBER PLANTATIONS.

A crop of rubber amounting to 67,828 pounds, for which a net average of 6s. 8½d. per pound was realized, was reported by the Directors in their report to the third annual meeting of the above company, recently held in London. This large crop, much in excess of the estimate, was made without overtapping any of the trees, although a considerable addition was made to the number of those tappable, the number having increased from 5,638 trees in September, 1909, to 74,094 in August, 1910. During the year an additional 34 acres has been planted with Pará, bringing the total area under rubber to 7,284 acres. During the current year a material addition will be made to this area, there being 974 acres felled and cleared and 490 acres ready for planting. The net profit for the year was £21,615 10s. 6d., making, with £5,662 4s. 7d. brought forward from last year, £27,277 15s. 1d. available for distribution. From this it was recommended that a dividend of 10 per cent. be paid, leaving £9,277 15s. 1d. to carry forward to next year.

RUBBER ESTATES OF JOHORE, LIMITED.

The report, prepared by the Directors of the above company, for submission to the fifth annual meeting, held May 18, records a good growth of trees. Tapping on 10,000 trees will be commenced in July, and this number should be materially increased before the end of the year. The total expenditure during 1910 was reported as exceeding the estimate, owing to the higher wages demanded by Chinese and Malays, who would gradually be replaced by Indian laborers.

CENTRAL TRAVANCORE RUBBER CO., LIMITED.

The Directors submitted a report at the fourth annual general meeting of the above company, held in London, May 8, in which they describe the growth of the rubber as satisfactory, with 1906 rubber soon ready for tapping. During 1910 a small quantity of rubber was obtained—145 pounds—of very good quality; the estimate for 1911 is 13,000 pounds of dry rubber, but owing to the recommendation of the manager, K. E. Nicoll, that no trees be tapped until they attain a girth of 18 inches, at three feet from the ground, this estimate may not be fully reached.

INAMBARI PARA RUBBER ESTATES, LIMITED.

According to the report submitted by the Directors to the third ordinary general meeting of the above company, held in London, the crop of rubber harvested for the year ended July 31, 1910, was 29,273 pounds, landed weight, which realized, after deducting freight, landing and all sale charges, a net average price of just over 5s. 11d. per pound.

Owing to the seizure by bandits of the canoes and rafts prepared for the second cacho expedition, its departure was much delayed, and only 640 pounds of cacho obtained before the close of the financial year. The total proceeds from the sale of rubber and cacho amounted to £8,868.

COLISEO SUGAR PLANTATION COMPANY.

This company has received the report of the final inspection committee of bondholders, showing development of the entire property completed, according to the requirements of the trust deed. The number of good growing rubber trees on the plantation in the State of Vera Cruz, Mexico, is estimated at 2,000,000, which by replanting will be increased by about 500,000 this year. The first planting is 7 years old, but commercial tapping will probably be deferred for several years to avoid possible injury to the trees.

The Manufacture of Insulated Wire.

(By a Practical Man.)

ONE of the great industries into which rubber manufacture divides itself is the insulation of electric wires. The half hundred factories in various parts of the world, while having in a measure their own processes and special machines, still come near enough together in practice to make a general description of one fit them all. The work of laying the rubber upon the wire calls for two distinct operations that are accomplished by the use of the spewing machine and the strip machine.

SPEWING MACHINE INSULATION.

The spewing machines used for this branch of the business are identical with the tubing machines common to all rubber factories, with the exception of the head, which is usually constructed so that the compounded rubber is emitted from the side of the head upon the wire which passes through it at right angles to the worm. It is true some machines are so constructed that the wire passes through a hole drilled the length of the worm, but this style is used only for small wire, and the manufacturer claims a speed of production for an 18 B. & S. wire of 12,000 feet per hour. The side delivery is, however, in more extended use, as it is contended that this method of forcing insulation upon wire gives it greater density, a most desirable item in a body required to resist electric voltages.

The compound containing rubber for spewing machine work is prepared in the mixing mills in the manner employed for mechanical stocks. "Bolivian fine" is extensively used, as well as African and other sorts, and high and low-grade reclaimed rubbers. It is conceded that the best insulation stocks are secured by use of fine Pará, and as a rule, specifications for the very highest type of insulated wire and cables call for its use.

While for ordinary "mechanicals" crude rubber requires but little breaking down to render it fit for use in compounds, such is its intractable nature, that before it can be successfully used in the spewing machine, in mixings containing 20 per cent. to 40 per cent., its time in the breaking-down process consumes from four to six hours. It is during this interval that, specifications permitting, paraffin, ozocerite and other substances known to contribute to electrical resistance, are worked into the crude rubber. As the electric fluid has a marked affinity for particles of sand, metal and foreign substances in general, the greatest care is observed in preparing the materials that compose the mixings. The mineral powders are sifted through silk or brass mesh sieves, and frequently the completed compound is passed through a tubing machine, a special head for which is fitted with No. 40 to 60 brass or steel mesh.

Finally, after preparation in this painstaking fashion, the insulation material is ready for the spewing machines. It goes directly to these from the mixing mills, as, in order to work successfully, it must be used while hot and tractable. It is cut in strips from the mills, or passes through a scoring machine that permits the spewing machine operative to tear it apart as required. Hand feeding of these strips or pieces, however, requires skillful manipulation to overcome the tendency of the thickness of the insulation to vary as each new piece of insulation material is fed into the machine. Some factories adopt the method, for light insulation, of passing the prepared compound through the calender and cutting it into strips of a specified width. Material thus prepared has the advantage of uniformity. The feed is, also, practically automatic, requiring little or no manipulation after the first end of the cut strip is in the machine, as the revolutions of the worm draw it in steadily. By this method, one man can frequently run the whole job, except where

a layer-up of wire on a drum is required; by the first method, and also where the wire is to be coiled in a pan, from two to four men are required.

With insulation material in proper working order, the next most important step is to secure its even and unvarying thickness on the wire. This is gained by manipulation of parts called the die and nipple, by means of set screws in the machine head. This centering is important, for insulation is only as strong as its thinnest part. A grain of sand, or a minute sliver of wood sticking in the die will throw the insulation out of center, or if successful in passing through, remain as a weak spot for the electric fluid to discover.

With this smooth and symmetrical cover, the wire glides swiftly onward to pan or drum for vulcanizing. If intended for the drum it passes in a double turn through a tank of cold water for the purpose of hardening the insulation coat. If a pan is to be used, the water bath is omitted. Pan curing is necessary for most high-grade insulation for the reason that its soft composition would flatten if wound on a drum. Consequently pans are bedded with talc, or soap stone, upon which the wire is coiled by hand, and this material supplied between each layer. It is a neat job calling for acquired skill, to lay the wire in absolutely concentric circles without tangling, crossing or bruising. All the operations connected with spewing machine work call for expert manipulation. For example, white or red core is a type of insulation used in vast quantities. The size commonly used is 14 B & S, and the wire receives two coats of insulation material: the outer coat black, and the inner coat white or red. These two coats are applied in one operation (the spewing machines being run tandem), the wire receiving from the first machine the colored core, and from the second, the black cover. Naturally the speed of each machine requires accurate adjustment to secure perfect work, yet 50,000 to 60,000 feet per day is ordinary production.

It is not uncommon, however, in high-grade insulation, for specifications to call for three grades of composition. The modern method is to set three machines in line, and apply all three coats in one operation. The layer next the wire is frequently pure, unadulterated Pará rubber, or all three coats may be compounded material.

Not only are all sizes of single wire successfully insulated by means of the spewing machine, but double and twisted conductors, and stranded cables. In short, the successful manufacturer of insulated wire must have a genius for this branch of the rubber manufacturing business, so varied and exacting are its requirements.

The insulation material, composed of costly ingredients, is valueless until vulcanized. This is accomplished in various types of vulcanizers by means of live steam, the length of time and the temperature being carefully adjusted to the requirements of each type and grade of insulation. Some single wires and almost all sizes of stranded cables receive a layer of rubber-coated tape before going through the curing process. This is wound about them concentrically, special machinery being required for the purpose of preventing the swelling of the rubber coat during this operation, and also to prevent its flattening or injury in handling.

Vulcanization, barring mechanical injury in process, for the first time raises the insulation material to the dignity of insulation; and having passed the voltage tests required of its grade, or by the specifications under which it was produced, it is for the first time commercially valuable. As a rule, however, it is

not yet ready for practical use. Most single wire has next to receive a finish in the form of a cotton, hemp or silk braid rendered waterproof or fireproof. Cables also receive one, frequently two braids, cotton, hemp and asbestos being used. Braiding machines, therefore, properly constitute an important item in a fully equipped insulated wire factory. They each hold from 16 to 48 spools (so varied are the sizes of insulation to be covered), and are easy to operate, girls being largely employed at this work. The insulated wire is delivered to the braiders on reels holding 1,000 feet or more, to meet requirements or convenience. As fast as covered with braid it is wound automatically upon other reels. A common speed of production is two feet or more per minute. Fireproofing is applied to some braids as fast as produced, and for wire that must be covered with a second braid, as for "duplex," it saves time and rehandling to saturate the first braid as it leaves the machine. Another important province of the braiding machine is to weave or braid into the cover the colored thread or threads that constitute the mark (registered in the trade) of the manufacturer. Thus the maker of insulated wire, if unknown by his fruits, can be identified by his thread.

But braid, while adding a most attractive item to the appearance of insulated wire, is, for many situations of little value until saturated with material that renders it waterproof. This, of course, spoils its beauty, but adds to its utility. Saturating was is applied hot, the wire being drawn through tanks containing it. After this, another and final coat is applied in the same manner, with the difference that the wire comes from the process with a brilliant polish.

Stranded conductors and cables, when of large size, call for a protective finish in form of galvanized iron or steel wire. It is properly called an armor, as its purpose is to prevent external injury. Cables are frequently of very interesting construction. They are made up of small wires twisted together, say, 19, 37, 61, and so on, in accordance with the kind of cable they are to form. These may be simply tinned copper wires, covered in the cabled form, with an insulation of rubber or other material, or each individual wire may first be covered with insulation, and then twisted into a cable. A cable thus made may form but a part of a larger one. For example, three of them twisted together would form a "three-conductor-cable." They are ponderous, and unwieldy, and require the heaviest machinery to handle properly. Twisted thus together, the space between conductors is filled with jute laid in from bobbins as the cabling process proceeds. Over this is wound perhaps a tape saturated with rubber compound—or two servings of jute laid on in reverse layers and immediately passed through a hot asphalt composition. This in turn would be covered by an armor of steel wires.

For many types of cable, instead of an armor of wire, an armor of lead is used. The lead for this purpose is melted in a smelter which forms part of a lead press. This press is fitted with a die block to preserve the outside diameter of the lead sheath to be applied to a cable. The cable is passed through the die, where it comes in contact with the melted lead (which is applied in much the same manner as rubber insulation), and both are spewed forth by use of enormous hydraulic pressure. This lead cover is seamless, flexible and impervious to moisture. Rubber insulated wire thus manufactured into cables lasts for years.

(To be continued.)

Robert B. Baird, vice president of the Rubber Trading Co. and commissioner of The Rubber Club of America to the Second International Rubber and Allied Trades Exhibition, to be held at the Royal Agricultural Hall, London, accompanied by Mrs. Baird and their son Robert Lisle Baird, will sail on the *Campania*, June 7, 1911, for Paris by way of London, but will return thither in time for the exhibition. Robert L. Baird will cover the Continental markets while abroad.

THE EDITOR'S BOOK TABLE.

THE PRINCIPLES OF SCIENTIFIC MANAGEMENT. By Frederick Winslow Taylor, M.E., Sc.D. New York: Harper & Brothers. Cloth, 8vo., 144 pp. Price, \$1.50 net.

JUST at the present time the big and, indeed, the little rubber manufacturers all over the world are tremendously interested in scientific factory management—that is "efficiency." The factory manager is a busy man, and if he gets up against a huge book full of abstruse formulae and long sentences, he scents theory rather than practical knowledge and shies. Mr. Taylor has written no such book. It is throughout exceedingly practical and, what is equally vital, is written in everyday concise English. Very rarely have we read anything on any industrial subject in which the author so thoroughly knows how to convey his meaning in short, convincing, readable sentences. He begins with the fundamentals of scientific management, and his first chapter is a most readable essay. He then goes on to the proofs of scientific management starting with the best type of ordinary management. From that, sometimes in quoted conversations with workmen, sometimes by illustration, he makes it so plain as to what can be done that the most skeptical reader will be charmed, and stirred.

The book, of course, is not written for rubber manufacturers particularly, but it is well worth their reading.

PROCEEDINGS OF THE SEVENTH INTERNATIONAL CONGRESS OF APPLIED CHEMISTRY, London; edited by Sir William Ramsay, K. C. B., F. R. S., acting president of the congress. Published by Partridge & Cooper, Ltd., London, E. C., England.

THIS CONSISTS OF 18 VOLUMES, one of which is devoted to the organization of the congress and the general meetings, together with a list of members from all parts of the world. The remaining 17 volumes contain more than 800 papers presented at the congress covering almost every chemical subject of present day interest. These essays, in English, German, French, and Italian, by men of every nationality, form a chemical symposium of wonderful value. Those that will perhaps most interest the rubber trade are in the volume entitled, "Legislation Affecting Chemical Industry," "Compulsory Working," by Prof. Albert Osterrieth, "The Influence of Patent Law on Chemical Industry," by E. F. Ehrhardt. In the volume on "Electro-Chemistry," "Electrical Testing Laboratories," by C. H. Sharp. "Inorganic Chemistry," "Colloid Chemistry and Some of its Practical Appliances," by Jerome Alexander, and "The Contribution of Chemistry to the Art of Road Building," by Allerton S. Cushman. Under "Analytical Chemistry," "An Improved Apparatus for the Rapid Estimation of Specific Gravity," by G. D. MacDougall, "Report of Work in Analytical Chemistry in American Universities and Colleges During 1906-08," by Prof. Philip Browning. Under "Organic Chemistry," "A Technical Process for Improvement of Low and Medium Grade Raw Rubbers," by Meyer Wilderman, Ph. D., B. Sc., "India-Rubber in North America—a Synopsis," by Henry C. Pearson.

OTHER BOOKS RECEIVED.

THE RUBBER CLUB OF AMERICA publish in convenient pocket size, the Constitution and By-Laws of the Club, together with a list of officers, standing committees and members to April, 1911. It is a neat, paper-covered booklet, 3½ x 6 inches, with 31 pages.

THE BOOK OF BIBENDUM (VOLS. I AND II), IN WHICH, TO THE accompaniment of grotesque illustrations, valuable information on the care of tires in general and Michelin tires in particular, is given. Published by the Michelin Tire Co., Milltown, N. J. Paper, 32 pages, 6 x 9 inches. Copies furnished on request to interested applicants.

U. S. FOR US. A READABLE LITTLE BOOKLET, DESCRIBED BY its publishers as "A Monthly Magazette, issued by the Advertising Department of the United States Tire Company, for exclusive circulation among members of the family"; it fully bears out its title. Paper, 7 x 4 inches, 24 pages.

NEW TRADE PUBLICATIONS.

BOSTON WOVEN HOSE & RUBBER Co., (Cambridge, Mass.) Newly-issued special catalogues of garden hose and of mats and matting and a condensed general catalogue, all of artistic execution and furnishing much valuable information concerning their productions, are issued by this company. Their convenient size, $3\frac{1}{2} \times 6\frac{1}{4}$ inches, will appeal to the ordinary user, while the completeness of the information they furnish and the tasteful design are fully in keeping with the company's publications.

The Wm. Powell Co. (Cincinnati, Ohio), send out catalogue and price list No. 10 of their engineering specialties, including a full line of valves, oilers, lubricators and other engineering specialties. It is compiled with evident care, dimension tables and sectional views, in blue print style, accompanying each article. Prices are given with each line and a telegraphic code is included in the book, which is octavo size, bound in cloth and contains 286 pages, with a 20-page supplement of valuable tables and useful information.

The Biggs Boiler Works Co. (Akron, Ohio), in a recently published and handsomely printed and illustrated catalogue No. 15, furnish information regarding the vulcanizers of every description, special plate and tank construction which they supply for rubber works, and their line of repair outfits; 16 pages, 9×6 inches.

Chas. E. Miller (Anderson, Md.). The vulcanizers and rubber specialties manufactured at the Anderson Rubber Works are described in a profusely illustrated catalogue they send out, valuable information of a practical character being embodied in the descriptions of the various articles its twenty-eight $6 \times 8\frac{1}{2}$ inch pages contain.

Byerley & Sons (Cleveland, Ohio), publish a booklet of 12 pages, $6 \times 3\frac{1}{2}$ inches, descriptive of their Byerlyte, a petroleum product that replaces asphaltum in the manufacture of varnishes, paints, pipe dipping, waterproofing for roofs, walls and foundations, etc.

Boston Belting Co. (Boston, Mass.), describe in an attractive booklet "Roxboro" Braided Non-Kinking Hose for air and water. Its advantages for every service are set forth in its sixteen $3\frac{1}{2} \times 6$ inch pages, which also quote prices for the different styles and sizes.

THE GOODRICH ROUTE BOOKS.—These exceedingly valuable volumes are the direct result of the work that the B. F. Goodrich Co. have been doing all over the United States in establishing road markers over routes travelled by motorists. A series is now being arranged for the Atlantic coast, another for the Middle West, and still another covering roads from the Mexican border on the Pacific coast as far north as roads go. Each book contains an abstract of the motor vehicle laws of the States, information regarding tires, repair, inflation, etc. It will also have tabulated, the locations of gasoline stations, repair garages, hotels and places where Goodrich tires are kept regularly in stock, together with excellent road maps indicating main roads, intersecting roads, steep up-grades, electric railroads, etc. Street and town maps will also be a valuable adjunct to the volumes. The B. F. Goodrich Co., Akron, Ohio. (Now in the press.)

THE DAILY PRESS AND INDIA-RUBBER.

The New York *Sun* announces that Wiedgerite (an asphalt) is sometimes high in sulphur and is said to be especially valuable for the manufacture of rubber substitutes.

The Waterbury (Connecticut) *American* comes out strongly against rough crushed stone spread on the roads and not rolled down, as doing great injury to automobile tires.

The Columbus (Ohio) *Dispatch* announces gravely that the roots of the guayule yield a juice from which rubber is extracted.

THE OBITUARY RECORD.

DR. PEHL OLSSON-SEFFER.

THE sad news comes from Mexico of the death of Dr. Pehl Olsson-Seffer, one of the best known of the foreign residents there, and one also whose name was familiar to the whole rubber world. Dr. Seffer was travelling by train on the Mexican Central Railroad from Mexico City to Cuernavaca, when the train was held up by revolutionists at El Parque, about twenty miles from Cuernavaca. They fired first into the engine and then into the Pullman. After a lull in the shooting Dr. Seffer attempted to leave the train and was shot and instantly killed. The revolutionists then drove the passengers from the cars and lining them up took all of their valuables. They then started them down the tracks, bidding them walk to Cuernavaca. The next day the *Jefe Politico* of Cuernavaca, disguised as a physician, secured the body of the unfortunate scientist and conveyed it to this city.



THE LATE DR. PEHL OLSSON-SEFFER.

Dr. Olsson-Seffer, who was 47 years of age at the time of his death, was born in Sweden, but educated in Finland, where his family had considerable property. At eighteen he graduated at Helsingfors University, but continued his studies there for a number of years. As newspaper journalist and editor, college professor, and business man, he was very active, particularly during the ten years that followed his graduation. He was an unusual linguist, being familiar with some ten languages. His travels were very extensive, covering the whole of Europe and most of the British possessions in the Far East. He was the author of many books and essays on scientific subjects and was a holder of fellowships in several universities. He came to the United States in 1903 and was instructor in systematic botany at the Leland Stanford University in California for two years. Here it was that he received his degree of PH. D. In 1905 he went to Mexico to install an experiment station and rubber laboratory for the La Lacualpa plantations at Soconusco. While in California he married Miss Helen Rolf, who was a teacher at the Stanford University. Some five years ago Dr. Seffer took up special expert work in connection with the various *Castilleja* plantations in Mexico. He also edited the planting notes in the *Mexican Investor*. Dr. Seffer is said to be a naturalized British subject, although born in Sweden. His death removes one who had great gifts in scientific lines and one, too, whose loss will be much felt.

A BOOK for rubber planters—Mr. Pearson's, "What I Saw in the Tropics."

Fire Hose---Criticism and Suggestion.

FROM a report of the Committee on Fire Hose delivered at the annual meeting of the National Fire Protection Association at the Waldorf-Astoria (New York), May 23, 1911. Submitted by W. C. Robinson, chairman of Hose Committee.

Fire hose is one of the most important factors entering into the problem of protection against loss by fire. It furnishes the most common means by which water is utilized in fire extinguishment by the trained men of our fire departments. The water works system, the fire department and the fire hose must operate together and each play its full part at time of fire, for the failure of any one at a critical time will destroy the efficiency of the others and a disastrous conflagration may result.

Fire hose may be considered as the flexible end of the water works system and this very quality necessitates that it be made of materials less durable and less reliable than the materials employed in the construction of the more permanent part of the water supply system.

Fire hose is subjected to a severe class of service, the great importance of which makes it essential that the utmost care be given to the quality of the materials and to the character of the workmanship employed in its manufacture, and yet, this is rarely the case, for fire hose is the one item regarding which but little is known by those who should be thoroughly well informed.

There has always been more or less of a mystery regarding the make up of fire hose and this has been fostered by those engaged in its manufacture. Very few buyers or users have had sufficient technical knowledge of the ingredients used or of their assemblage to enable them to prepare specifications sufficiently well balanced to insure the receipt of fire hose of the quality desired. Municipal authorities and fire departments have been obliged to accept the statements of the manufacturers or their sales agents and to purchase fire hose without any real information as to the quality of the goods paid for.

This has led to the establishment of the present almost universal practice of selling fire hose under "trade names" or "brands" which are supposed to indicate, and in many cases undoubtedly have indicated the quality of the materials supplied. In consequence, where the better qualities of fire hose have in the past been secured, a very strong inclination is found on the part of fire departments to continue to buy the particular brand, which, in their opinion, has given good service. This is natural, and so long as the trade name represented the high quality of materials which was responsible for its good reputation, no danger existed, although the city is thus placing itself in a position where competition is limited.

Formerly the better grades of rubber were practically the only grades employed in fire hose for which any real contention covering quality was made. In fact, the only raw rubber available was of a high grade. Conditions are now very materially changed and crude rubbers of various grades have come into general use and processes have been developed for reclaiming rubber and admixing different grades for various purposes. This has resulted in the substitution of inferior rubbers in fire hose which has seriously affected its quality and reliability.

Another important factor which has undoubtedly influenced the quality of fire hose is the greatly increased demand for the best grades of rubber in other products, as, for instance, the inner tubes of automobile tires.

Under the present system of selling hose and with the purchaser in ignorance of proper requirements or means to enforce them, the temptation to use the cheaper and inferior raw gums and shoddy is obvious.

TESTS OF HOSE FROM THE FIELD.

A careful investigation covering most of the better known brands now being sold, furnishes undisputable evidence that the quality of fire hose, even of brands enjoying the best reputation, is inferior and the trend downward.

The results of extended tests and examinations of twenty-eight different brands of cotton rubber lined fire hose, including thirty-three different samples received from fire departments in practically all sections of the country, show important deficiencies in all, and clearly indicate that something should be done which will enable municipalities to equip their fire departments with a thoroughly reliable fire hose and afford owners and occupants of private properties some sure means of securing hose of the proper quality.

RUBBER LINING.

The most common as well as the most important defect brought out in the investigation relates to the rubber linings employed. Extended analyses show that the percentage of gum used varies from about twenty-six (26) to fifty-two per cent. and that low grade gums are almost invariably used. In only a very few cases could any claim for high grade rubber have been justified and these did not meet requirements which would constitute a reasonable minimum for rubber used in fire hose. Compounds which contain pure gum even of a high grade are often rendered inferior by the admixture of reclaimed rubber or shoddy and mineral oils or by the use of too little gum in the mixture.

The following summary of the results of the chemical and physical analysis of a total of thirty-two samples will serve to indicate the general quality of the rubber lining used in the hose tested:

Seventeen linings classify as very inferior grade.
Twelve linings classify as low grade.
One lining classifies as medium grade.
Two linings classify as fair grade.
One lining classifies as high grade.

Average tensile strength, all samples..... 736.8 pounds
Highest average tensile strength for any hose..... 1,368 pounds
Lowest average tensile strength for any hose..... 199.5 pounds

Average elongation at breaking point for all samples 8.02 inches
Highest average elongation at the breaking point.. 11.9 inches
Lowest average elongation at the breaking point.... 4.2 inches

In only 12 cases could the samples be stretched to four and one-half (4½) times their original length without rupture and in only one of these was the recovery within the limits specified, ten minutes after release, notwithstanding the moderate test conditions.

The averages for all hose given above were obtained from over 130 test samples and the averages for individual hose from four samples, the test pieces being cut longitudinally from the tubes in all cases.

As rubber analysis is complicated and difficult the precaution was taken to have the results verified by an independent rubber chemist of standing. No important variations were found in the analyses.

High grade hose linings possessing the requisite aging qualities, strength and elasticity require a fine grade of raw rubber, fairly free from foreign matter, properly vulcanized with suitable mineral filler. Compounds containing 40 per cent of fine Pará rubber have been found to possess these qualifications.

Pure fine Pará gum remains today as in the past, the standard of quality. The fact that high grade compounds can be made from it is beyond question. In order, therefore, to secure a high grade hose lining of known quality and value, the safe course is to see to it that this grade of rubber is used in its manufacture. It should be remembered that the quality of the rubber lining exerts the greatest influence on the life or lasting property of fire hose.

COTTON FABRIC.

The defects found in the cotton fabric used in the hose tested while important in many instances were generally of secondary importance compared with those relating to the rubber portion of the hose. Wide variation was noted in the degree of excellence in weaving as well as in the character of the finished product. Very little, if any, staple cotton could be identified, that most commonly employed being considerably less than one inch in length. There was also evidence of material difference in the grade of the cotton used.

A difference amounting to nearly 80 per cent is noted between the weights of the finished fabric of double-jacketed fire hose, based on the difference between the weights of fifty feet of finished hose without couplings and the weights of fifty feet of lining and backing, estimated from the weights of short sections.

A wide variation was noted in the strength of the fabric as evidenced by the results obtained in the hydrostatic bursting tests of three-foot sections lying straight, some of the lighter fabrics showing an ultimate strength several hundred pounds higher than others in which more material was used and which showed no apparent defects.

Average bursting pressure of 32 samples.....	700.37 pounds
Maximum bursting pressure	975. pounds
Minimum bursting pressure	475. pounds

In only five cases did the bursting pressure fall below 600 pounds to the square inch. In one case the coupling failed before the hose burst.

Fabric was commonly employed which contained unsightly and injurious defects which should not have been allowed to pass even the most superficial inspection at the factory. Marked variation in the size of the fillers, unevenness in the tension and distribution of the warps and fillers, numerous knots or splices close together and considerable areas in which the weaving was very uneven or in which the fillers were skipped by the warp strands are among the defects most frequently noted.

The behavior of the hose in the hydrostatic pressure tests of the full length sections also indicated defects in weaving resulting in excessive elongation, warping and improper direction of the twist. Weakness due to the defects previously mentioned were also brought out in these tests.

The following is a summary of the results relative to fabric obtained in the hydrostatic pressure tests of full length sections at 300 and 450 pounds to the square inch.

ELONGATION AT 300 POUNDS PRESSURE.

Average elongation for all hose tested.....	49.1 inches
Maximum elongation of any length.....	81.87 inches
Minimum elongation of any length.....	21.87 inches

The samples tested were not exactly fifty feet in length, but did not vary from this dimension to any considerable extent.

TWIST AT 300 POUNDS PRESSURE.

Average amount of twist for all hose tested.....	.85 turns
Maximum amount of twist in any length.....	1.87 turns
Minimum amount of twist in any length.....	0 turns

In two cases practically no tendency to twist was noted. Of the balance, 20 samples twisted in a direction tending to tighten and 11 samples twisted in a direction tending to loosen the couplings.

WARPING AT 300 POUNDS PRESSURE.

Average amount of warping for all hose tested.....	12.33 inches
Maximum amount of warping in any length.....	45. inches
Minimum amount of warping in any length.....	0. inches

In only two cases did the hose show any tendency to rise from the table and writhe. In several cases it was necessary to straighten the hose and place it back on the table. The maximum deflections from the original position are given in the above and not the number of convolutions.

TESTS AT 450 POUNDS PRESSURE.

Of the thirty-three lengths tested, three failed at or below 450 pounds pressure.

In one of these the hose burst at 410 pounds, fifty-one and twenty-seven filler strands being ruptured in the inner and outer plies, respectively. Examination showed imperfect weaving at the point of failure.

In another case the warp strands in the inner ply started to break at 400 pounds and were broken quite generally in this ply at 450 pounds and to some extent in the outer ply. In this case the fillers were apparently uninjured.

In the third case the hose burst about three minutes after 450 pounds had been reached, seventeen and sixteen filler strands being ruptured in the inner and outer plies, respectively.

High grade hose fabrics possessing the requisite strength, wearing qualities and flexibility must be made of a good grade of cotton of fairly long staple. They should be even and firm in texture throughout, and free from all defects which will weaken the fabric at any point or result in unevenness in the surface presented to wear. The weaving should be such that the elongation and tendency to warp out of shape will not be excessive when the hose is under pressure and sufficiently well balanced to prevent excessive twisting under the same conditions.

CEMENT BACKING.

The defect next in importance and which was present in the hose tested to a very marked extent, relates to the cement backing and the influence this has on the character of the surface of the waterway and consequently on the efficiency of the hose. In the majority of the hose tested the backing was thin and insufficient to properly fill the interstices between the fillers and reduce the corrugations to a minimum. In many cases it was apparently of inferior quality and did not provide a reliable and sufficient bond

between the tube and the jacket. In one case the presence of dirt and numerous cotton strands between the backing and the fabric formed marked ridges in the surface of the waterway, prevented good adhesion and indicated carelessness on the part of manufacturer.

In many cases the lining was provided with heavy backing from two to four feet back from the couplings and was fairly smooth in those portions, the balance of the lining being badly corrugated.

The hydraulic friction loss was in excess of that allowable for good hose in ten cases out of twenty-six samples tested. In six cases it was excessive, amounting to over twenty pounds per 100 feet with 250 gallons per minute flowing. At higher velocities the difference between the allowable loss and that obtained in the tests of such hose generally increased quite rapidly. The surfaces of the waterway of hose in which the friction losses were 25.8 and 14.1 pounds per hundred feet with 250 gallons per minute flowing. The allowable loss for good hose at this rate on flow is about 15 pounds per hundred feet.

Average friction loss of 26 lengths tested.....	16.1 pounds
Maximum friction loss in any length.....	25.8 pounds
Minimum friction loss in any length.....	12. pounds

COUPLINGS.

The tests and examinations of the couplings attached to the hose submitted show that this item is also commonly slighted not only in regard to the quality of the castings and workmanship but in the attachment of the couplings to the hose.

The average weight of the couplings for 2½-inch hose was 5 pounds 4.2 ounces, including the expansion rings. The maximum weight for any set of couplings was 6 pounds 4.77 ounces, minimum 4 pounds 10.18 ounces. In 14 cases the couplings were overweight and in 13 cases they were underweight.

The castings were not analyzed, but their color indicated that the percentage of copper was low in eleven cases. In nearly all, the tail pieces and expansion rings were shorter than specified in the standard and in some the metal was not strong enough to resist the stress of expanding the binding rings without rupture or material distortion. In several cases the corrugations for binding the hose contained sharp projections due to sand left in the moulds and in several cases the corrugations were sharp enough to cut the hose fabric.

The machine work was generally well executed and the castings well finished, but sufficient care was not always exercised in obtaining the proper thickness of metal in all portions. In three cases the couplings were ruptured in the bursting tests of three-foot sections, the male threaded ends being blown off at 841, 617 and 542 pounds to the square inch, respectively. Examination showed that the metal was less than 1-16 inch in thickness at the point where the threaded portion joins the tail pieces—a section entirely too thin to safely withstand possible conditions of service.

In one or two cases, couplings made by different manufacturers were not interchangeable, although they were sold to the same city.

The couplings were attached to the hose so as to withstand the 300 pounds pressure test without leakage in 17 cases out of the 33, careless workmanship being generally responsible for the defects. The most prominent defect resulting in leakage at the couplings was the absence of or imperfect installation of rubber washers between the expansion rings and tail pieces, although in several cases where the washers were properly installed, the rings were insufficiently expanded to make a tight joint. Liberal leakage was noticeable past the tail pieces at pressures as low as 10 pounds to the square inch and sweating through the fabric, due to leakage around the ends of the hose, was noted as far as 13 feet back from the couplings. Where the couplings were tight at 300 pounds they were usually tight at 450 pounds to the square inch.

The cotton fabric was doubled back in the coupling in many cases and was quite badly cut by the corrugations in several instances. The internal diameters at the tail pieces of some couplings were too large and the rubber linings were cut part way through by the expansion rings in quite a number of cases.

Loosely fitted gaskets were employed in many of the couplings. These were forced back into the recess in the swivel at pressure as low as 90 pounds to the square inch, causing bad leaks in almost every instance. The gaskets projected into the waterway in most all of the couplings, amounting to 1-32 to 1-16 inch at all points in many instances.

From the foregoing it will be seen that the fire hose now being received by fire departments throughout the country is not by any means all that it should be.

The present general practice of purchasing hose by "brand"

or "trade name" under a short term guarantee is chiefly responsible for the present unsatisfactory condition of fire department hose. Under the guarantee system the hose dealer need only figure on a quality of hose just about good enough to last during the term of the guarantee and a few replacements during the term can probably be made at less cost than to furnish hose which would not have to be replaced. The guarantee serves to conceal the real merit of the product. Behind it the quality of the materials and workmanship may be manipulated with but little regard for the purchaser. It usually covers only defects of manufacture, and the more important matter of the safety of those who must use the hose or any damage to property, resulting from its failure, is, of course, not contemplated.

The solution of the difficulty lies in the abolishment of the guarantee system and the purchase of hose under a method by which the buyer can be fully informed as to the quality of the goods necessary for his purpose and as to all essential details of the tests and examinations which will enable him to see that he obtains this quality. This can best be accomplished by the use and enforcement of proper specifications.

It has been argued that specifications drawn by those not engaged in the manufacture of hose are theoretical, impracticable and wholly unsuitable and that the long experience of the manufacturer has placed them in possession of information relative to the materials entering into use and essential details of manufacture, which enables them to produce superior hose in a manner known only to themselves.

Up to a certain point these contentions are undoubtedly true, particularly those relating to the details of manufacture, but when the statement is made, at least inferentially, that this very expert knowledge of the details cannot be utilized when materials of the best quality are specified, such claims should be discounted as possibly prompted by too selfish a motive.

The performance of fire hose in actual service has been observed for many years and it has not been difficult to attribute the results to the causes which produce them. Experienced analysts have pulled apart in the most searching way that which the manufacturers have built and have become sufficiently expert to place the causes for results, both good and bad, in their respective positions and to assign to them their proper values. This also without intimate knowledge of the details of manufacture, but perhaps with a more thorough comprehension of the reasons for the results observed.

The following specifications for the construction of fire hose are presented for adoption with the utmost confidence that their strict enforcement will result in the production of a thoroughly reliable and efficient fire hose. They differ from the specifications heretofore adopted at the suggestion of the manufacturers and designated by them as minimum requirements, mainly in the items covering the quality of the rubber and the staple of the cotton to be employed in the fabric.

Aside from closer lines covering the quality of materials, the specifications are sufficiently broad to permit the maker to employ the expert knowledge as to the details of manufacture which he may have gained by experience. They do not require the best fire hose which can be made, but do constitute a reasonable necessary criterion of quality suitable for enforcement by American fire departments under present day conditions.

The use of specifications carries with it the obligation to see that they are enforced. To effectually accomplish this necessitates that the purchaser have those in his employ who are competent to pass on the subject or that he employ experts or that part of the work be done by those in his employ and part by outside experts.

[Specifications for cotton rubber lined fire hose, for rubber fire hose, and for mill hose, were here taken up and passed with only minor amendments. They are practically the same as those with which the trade are familiar and which have been already discussed in THE INDIA RUBBER WORLD.]

It is probably safe to say that no city or municipality is today properly equipped to render competent judgment on the quality of rubber furnished in fire hose, nor can it be expected that the vast majority of those purchasing fire hose ever will be, for considerable experience and a special knowledge of the chemical and physical properties of rubber is essential.

The problem is not radically different from those with which the buyer is confronted in the purchase of many other materials furnished under specifications. He is able to avail himself of the product of such manufacturers as are in a position to furnish reliable evidence that their goods are in full compliance with the specifications, or, he can examine and test the materials before acceptance, calling in experts to pass on any particular features which he is not qualified to judge.

All of the essential items covering materials and workmanship are included in the specifications, as are also the minimum test requirements. With the exception of the items covering the

rubber, comparatively little experience and but little test apparatus is required to obtain the necessary information as to compliance of fire hose with the specifications.

In the matter of the rubber compound the most economical, satisfactory and comprehensive method of securing the necessary data on quality and compliance with the specifications, is undoubtedly through the employment of an agent of the buyer stationed at the factory and supplied with the necessary facilities for observing and checking the ingredients and manufacturing process. Chemical and physical analysis of the completed material are valuable as counter checks on such service, but are not its equivalent as a practical and wholly reliable inspection method.

Fire hose is certainly of sufficient importance in the general economy of things to warrant an equal position with, if not precedence over other industries in securing the proper quality of the materials entering into its manufacture.

The steady increase in the concentration of values in congested districts and the large number of recent fires of uncommon magnitude serve to keep constantly before us the vital importance of the strictest attention to the reliability of all necessary safeguards. The question of the reliability of fire hose has assumed an importance far beyond that of any special interest or industry, no matter how large it may be. In fact, from the view point of its possible influence for good or bad in the safeguarding of our cities, this question is of national importance, for the destruction by fire of any one of a number of our larger cities would unquestionably prove a national calamity.

INDIGENOUS RUBBER AT THE RUBBER EXHIBITION.

AT a well-attended meeting of gentlemen interested in indigenous rubber, held in London recently, the desirability of taking some action to secure the proper representation of indigenous, as compared with plantation rubber, at the approaching rubber exhibition, was discussed at length. It was pointed out that of the world's entire production of rubber, estimated as approximating 80,000 tons, only about 8,000 tons, or 10 per cent., was plantation rubber. The indigenous rubber movement had been started, said the speaker, the Earl of Errol, K. T., C. B., to make known the special merits of native rubber, and those interested in Brazilian, Bolivian and African rubber should make an effort to make a big exhibit at the forthcoming International Rubber Exhibition. The Brazilian Government, he announced, had already made a substantial contribution to the undertaking, and if those interested in the *Hevea Braziliensis*, of Brazil, Peru and Bolivia would join those interested in the *Castilloa* of Mexico, America would be well represented. Those interested in the *Funtumia* and *Landolphia* rubbers of Africa, should also join, which would make the representation of native rubber complete.

A resolution "that an executive committee be formed, composed of gentlemen interested in indigenous rubber, to take steps to establish a collectors' exhibit of native rubbers at the International Rubber Exhibition to be opened in the Agricultural Hall on June 24, 1911," having been unanimously adopted, the following committee was appointed with power to add to their number, to carry out the scheme regarding the exhibition of native rubber:

Sir F. Newnes, M. P., Sir Thomas Holdich, Messrs. A. Radcliffe, A. Bethune, R. A. Gray, J. A. Douglas, J. T. Dunleavy, J. M. Boustead, H. Hamel Smith, J. Darnley Taylor, Fawcett, Edwards and H. H. Vasconcellos.

Several cases having come before the board of United States general appraisers at New York, involving the rate of duty on imported waterproof coats, an opinion has been given that such goods are dutiable as manufactures of rubber under paragraph 463, Tariff act of 1909, which imposes a rate of 35 per cent. *ad valorem*.

New Rubber Goods in the Market.

A PRACTICAL REINFORCEMENT FOR TIRES.

A TIRE re-inforcement that is claimed to be light, resilient, inexpensive and capable of materially increasing the longevity of a tire, is illustrated herewith. Made of rubber, covered with a good quality of duck, it is endless in form and exactly fits the inside of a standard sized casing. It is in-



THERMOID TIRE REINFORCEMENT.

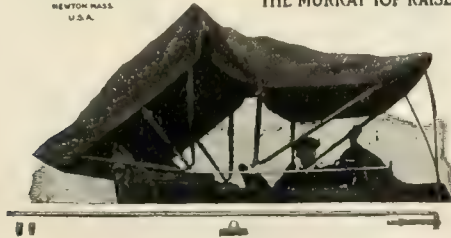
tended for insertion between the outer casing and the inner tube and it is claimed that its form and material will not in the least impair the resiliency of the tire. The effect of this device on the distribution of the strain proves equally effective in the case of either new or old tires, and where a weak spot exists it is very apt to prevent a disastrous blow out. A claim of at least 40 per cent. increase in the life of a new is made for the re-inforcement, which answers, at a small part of the cost, every purpose of a spare tire, a fact that will appeal to every motorist. [Thermoid Rubber Co., Trenton, New Jersey.]

THE MURRAY TOP RAISER.

HOPEWELL BROTHERS, whose rubber specialties in connection with automobiles are well known, are out with another novelty, a top raiser and lowerer. The device is very simple, enabling one person to put up or lower the heaviest top without assistance. Neither does it disturb the occupants of the car, nor

HOPEWELL BROTHERS
NEWTON MASS.
U.S.A.

THE MURRAY TOP RAISER.



do the bows mar the car body anywhere. The device is simply a steel rod with a bronze sliding arm and two prop nuts. The last mentioned are substituted for the prop nuts regularly used. To them the rod and sliding arm are attached. Then standing on one side of the car one man can raise or lower the top with the greatest ease. The device will fit any car. [Hopewell Brothers, Newton, Massachusetts.]

A DRESSING FOR RUBBER.

THE shabby appearance of rubber tires, steps, mats, running boards, tubing, etc., often detracts materially from the smart appearance of a car and is an eyesore to the owner. To apply some of the preparations sold for cleaning rubber, is to risk its destruction and "Slikup" is offered as free from such objections while answering every requirement. It is claimed that while it beautifies the appearance of the rubber it protects it from the effects of sunlight, fills up air holes, prevents sand blisters and imparts a fresh, agreeable color to the rubber substance. While successive coats, as they may become necessary are applied, there is no accumulation on the surface, as in the case of paint; rain has no effect on it; it is elastic enough to stretch and bend

with the rubber and is supplied in slate and cream colors. It comes in tins, ready for use and is easily applied. [N. B. Arnold, 98 Montague street, Brooklyn, N. Y.]

INDIA STRIPE GARMENTS.

A FEW years ago the leading light weight rubber garment was known as the "India Stripe." It was not only exceedingly pretty, but very light and universally popular. For a time the people's taste drifted to heavier goods and to other kinds of rain protection. It is interesting to note that popular fancy has again turned toward these goods and the demand is rapidly increasing. In response to this call the Apsley Rubber Co. (Hudson, Massachusetts), who were the originators and patentees of the India Stripe process, are again manufacturing them in large quantities. The garments are made particularly in the sizes and styles adapted for misses and children. The accompanying illustration shows one of many of these styles called the "Arco" cape with visor, which is covered by the company's patent.



SHOWING VISOR TURNED IN
PATENTED

A HEAVY-WEAR SOLE FOR RUBBER BOOTS.

FOR irrigating work and general farm purposes, a substantial sole is indispensable for a rubber boot. Such is the the Spearhead Spading Sole illustrated herewith. A heavy shank, which



SPEARHEAD SPADING SOLE FOR RUBBER BOOTS.

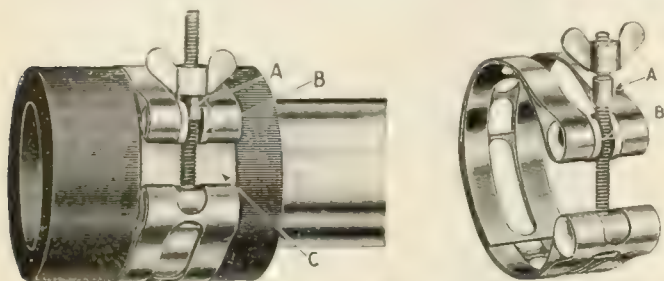
this sole provides, means extra life to a rubber boot, its tendency being to force the boot back into shape, after bending the foot, thereby preventing wrinkles in any one place, which cause blisters that ultimately break and destroy the usefulness of the boot. [Hood Rubber Co., Boston, Mass.]

THE "PUSSY FOOT" NON-SKID TIRE.

DERIVING its title from the fact that as the claws of a cat are concealed in her foot until she needs them, the metal studs with which it is equipped are submerged below the surface of the rubber, and only appear above it when in action, the safety non-skid tire is known as the Pussy-foot tread tire. Examination of its working surface fails to reveal any of the protuberances familiar in most types of non-skid tires, but when needed they make their appearance and being of steel, hollow and cup-shaped, present four cutting edges, which it is claimed, will prove an efficient stop to skidding under all circumstances without affecting the resiliency of the tire. [Safety Tire Co., New York.]

THE CATELAIN CLAMP.

For attaching hose to metal pipe, nozzles, etc., the Catelain Clamp, illustrated herewith, is said to possess special advantages. It takes but a few seconds to attach or detach it and the pressure it exercises on the hose is even over all its circumference. It is



THE CATELAIN CLAMP.

claimed that it cannot slip, loosen or cut the hose and that in application it is simplicity itself. It is illustrated herewith detached and in operation. [A. C. Catelain, 1447 Indiana avenue, Chicago, Illinois.]

SHOOTING WITH RUBBER PROJECTILES.

The pop-gun is a time-honored toy that every country boy knows how to make from a piece of elder wood. The gun illustrated herewith is also a pop-gun, and like its venerable ancestor creates a disturbance with the aid of a cork attached to a string. But it does something else, something that will endear it to the heart of every small boy who has the intuitive love for something that will "shoot." It propels a small soft-rubber ball



THE MARKHAM AIR RIFLE.

(9-16 of an inch in diameter) with astonishing accuracy, for 25 feet, and furnishes excellent sport for target shooting, shooting at military tops, etc. It is very well made and handsomely finished, presenting an attractive appearance and sells at a very low price. It should be added that the rubber ball, which is soft, will not do any damage. [The Markham Air Rifle Co., Plymouth, Michigan.]

THE "TUXEDO" LADIES' RUBBER.

In the accompanying illustration a rubber shoe for ladies' wear is shown that is expected to prove popular. The top of Jersey cloth, with button effect, the short vamp and high heel, make it suitable for the prevailing mode in foot wear and give it an attrac-

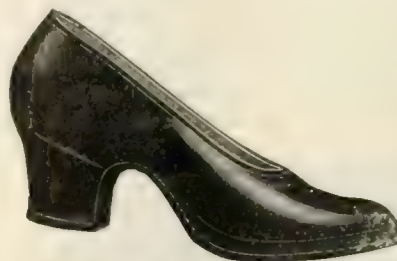


THE "TUXEDO" RUBBER SHOE.

tive appearance. The fact that the "Tuxedo" rubber—which is the name conferred upon it—is fleece lined, will adapt it particularly for evening wear, during the winter months. [The Beacon Falls Rubber Co., Beacon Falls, Conn.]

THE LATEST HIGH ARCH RUBBER.

With a view to meeting the demand for a rubber that will fit the shoes with 1¾ or 2-inch heels fashion dictates for ladies' wear, the High Arch Croquet; illustrated herewith; has been

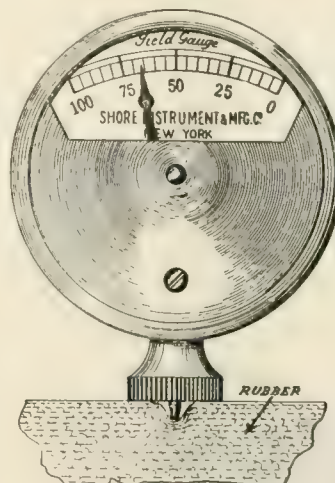


HIGH ARCH CROQUET RUBBER.

placed on the market. It is a new last, the latest in "high arch" rubbers, its graceful lines being especially adapted to appeal to the feminine taste for the beautiful, while its form makes the wearing of rubbers with the prevailing styles of high-heel shoes practicable and comfortable. [L. Candee & Co., New Haven, Conn.]

THE SICO YIELD GAUGE.

In determining the hardness, flexibility or elasticity of india-rubber the methods commonly pursued are biting the sample with the teeth, compressing it between the finger and thumb, or sticking the finger nail into it, which certainly savored sufficiently of rule of thumb to be designated as empirical and possessed the serious disadvantage of permitting of no record or communication between parties interested as to hardness or softness of the specimen.



SICO YIELD GAUGE.

The Sico Yield Gauge, illustrated herewith, reduces this test to a uniform, scientifically accurate and recordable certainty. When its sensitive blunt point is pressed against the rubber to be tested the amount of pressure required to force it into the rubber, in other words, the resistance it encounters, is recorded on the dial on a graduated scale.

Normally, the indicating hand is stationary at 100; when a very soft substance is under test, there may be only a deflection of 5 degrees, which indicates the extent of the resistance to yield, or, in other words, the hardness of the substance. The cost of the instrument is small, it is compact and easy to operate and understand and as a measurer of pliability is likely to prove useful to buyers and users of rubber in every form. [Shore Instrument & Mfg. Co., 555 West 22d street, New York.]

THE "MYSTIC" SPRAY NOZZLE.

The Mystic nozzle, which we illustrate herewith, is advertised as "the cheapest spray nozzle on the market." The manufacturer claims that it gives an almost perfect spray with a good, full stream. It doesn't shut off the water. This, however, would be



considered by most rubber men to be an advantage rather than otherwise as it saves the hose. The Mystic is full size and weight and is probably the most popular spray nozzle on the market today owing to its efficiency and low price. [W. D. Allen Manufacturing Co., Chicago, Illinois.]

A TIRE PRESERVER.

WHERE a tire shows weakness or has blown out it is frequently discarded, although there may still be a good wear in it. Comparatively few tires wear through on the treads before they give out on account of fabric breaks. The fabric breaks that are on the inside of the casing cause the tube to chafe and it gives way when least expected. In the accompanying illustration is shown a device by means of which a tire showing signs of weakness is

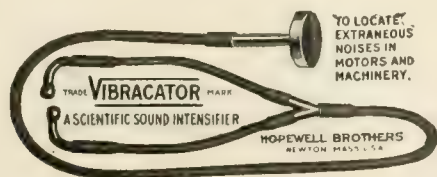


BOSTON TIRE AND RUBBER CO.'S TIRE PRESERVER.

strengthened and its life prolonged. Made endless, of several plies of fabric and rubber vulcanized together and molded to fit the inside of the casing it is coated on the outside with cement so that when the tire heats by friction in running it becomes part of the casing itself and makes its interior as smooth as when new. Easily inserted and reasonable in cost it goes a good way to prevent tire troubles and adds life to the tire. It can be obtained in 20 sizes, ranging from 28 x 3 to 36 x 5 and makes the casing good until completely worn out. [Boston Tire and Rubber Co., No. 184 Friend street, Boston.]

A NEW "KNOCK" LOCATOR.

WHEN the human machine goes wrong and the trouble is not easily apparent, the physician attaches one end of a stethoscope to his ears, and sounds various parts until the seat of the trouble is located. Some such reliable device for machines not human, such as automobiles has long been needed. It is found in the



vibracator, which is a scientifically designed sound intensifier. It is made of rubber and metal. In use the ear tips are put into the ears so as to shut out external sounds, then the corrugated diaphragm head is placed against the machine case and moved about until the sound is absolutely located. By the way, the device is of use in any factory particularly in locating pounding in steam engines due to water in the cylinder, loose packing rings, or defects in valve setting. [Hopewell Brothers, Newton, Massachusetts.]

AUTO AND AVIATION WRAPS.

AMONG the ladies' new wraps for aeroplaning or motoring displayed at John Wanamaker's store are some very smart imported raincoats. One, called the "Bleriot" is of heavy corduroy, dark green or brown, and with a rubberized lining; another, the "Mercedes," and the "Simplex" are of silk rubber; the "Renault" of satin rubber and the "Cycliste" of crepe de cygne. These last are in colors of tan, champagne and blue, and are not expensive

RESULTS OF THE GRANT PATENT DECISION.

THE action of the Consolidated Rubber Tire Co. concerning infringers of the Grant patent is awaited in the trade with considerable interest. Naturally neither the company nor the 15 or more rubber companies that are said to have been making solid tires that infringed are explaining their respective positions.

The Grant patent has some two years yet to run and it is a question whether either side would take much interest in licenses, although it is understood that the Consolidated company has no objections to granting them. Damages, if granted, would be assessed for a period covering six years from the present time, in case suit had not been brought previously. Some, however, were instituted about four years ago which would make the period ten years.

The company seemed to be engaged in conference with various solid tire manufacturers with the idea of getting an estimate of the poudage made by each company during the last 6 to 10 months. For a guess the plan is to be able to secure through damages at least enough to remunerate the company for its very expensive law suits which have been industriously prosecuted for some years past.

The historic Grant patent was issued to Arthur W. Grant, February 18, 1896. It has been the subject of much litigation. The patent was sustained in the following cases: The Rubber Tire Wheel Co. vs. The Columbia Pneumatic Wheel Co.; the Consolidated Rubber Tire Co. vs. Finlay Rubber Tire Co.; the Consolidated Rubber Tire Co. vs. Firestone Tire & Rubber Co.; the Rubber Tire Wheel Co. vs. Milwaukee Rubber Works; the Diamond Rubber Co. of New York vs. the Consolidated Rubber Tire Co. The patent was also declared valid in the Circuit Court of Appeals of the Republic of France, sitting at Paris, in 1902. It was held invalid in the Goodyear Tire & Rubber Co. et al., vs. the Rubber Tire Wheel Co., and in the Rubber Tire Wheel Co. vs. Victor Rubber Tire Co.

UNITED STATES RUBBER CO.'S ISSUES.

TRANSACTIONS on the New York Stock Exchange for five weeks, ending May 27:

COMMON STOCK, \$25,000,000.

[The treasury of a subsidiary company holds \$1,334,000.]

Last Dividend, April 30, 1900 15¢.

Week April 29	Sales 5,500 shares	High 40 $\frac{3}{4}$	Low 38 $\frac{1}{4}$
Week May 6	Sales 5,900 shares	High 42 $\frac{1}{4}$	Low 38
Week May 13	Sales 3,650 shares	High 40	Low 38 $\frac{7}{8}$
Week May 20	Sales 14,100 shares	High 41 $\frac{7}{8}$	Low 39
Week May 29	Sales 8,370 shares	High 42 $\frac{5}{8}$	Low 41 $\frac{1}{4}$

For the year—High, 47 $\frac{7}{8}$, March 1; Low, 36, January 6.
Last year—High, 52 $\frac{1}{4}$; Low, 27.

FIRST PREFERRED STOCK, \$39,824,400.

Last Dividend, April 29, 1911—2%.

Week April 29	Sales 550 shares	High 113	Low 111 $\frac{1}{2}$
Week May 6	Sales 830 shares	High 113 $\frac{7}{8}$	Low 113
Week May 13	Sales 505 shares	High 112 $\frac{1}{2}$	Low 112
Week May 20	Sales 1,100 shares	High 114	Low 112
Week May 29	Sales 1,300 shares	High 114	Low 113 $\frac{1}{4}$

For the year—High, 114 $\frac{7}{8}$, April 10; Low, 109 $\frac{1}{2}$, January 18.

Last year—High, 116 $\frac{1}{2}$; Low, 99.

SECOND PREFERRED STOCK, \$9,965,000.

Last Dividend, April 29, 1911—1 $\frac{1}{2}$ %.

Week April 29	Sales 725 shares	High 77 $\frac{3}{8}$	Low 76 $\frac{1}{2}$
Week May 6	Sales 600 shares	High 77 $\frac{1}{2}$	Low 77
Week May 13	Sales 600 shares	High 76 $\frac{5}{8}$	Low 74 $\frac{1}{2}$
Week May 20	Sales 3,100 shares	High 77 $\frac{3}{4}$	Low 76
Week May 29	Sales 100 shares	High 77 $\frac{3}{4}$	Low 77 $\frac{1}{4}$

For the year—High, 79, March 1; Low, 72 $\frac{1}{2}$, January 31.

Last year—High, 84; Low, 59 $\frac{1}{2}$.

SIX PER CENT. TRUST GOLD BONDS, \$19,000,000.

Outstanding of the 1908 issue of \$20,000,000.

Week April 29	Sales 38 bonds	High 105	Low 104
Week May 6	Sales 153 bonds	High 105	Low 104 $\frac{3}{4}$
Week May 13	Sales 33 bonds	High 104 $\frac{7}{8}$	Low 104 $\frac{5}{8}$
Week May 20	Sales 33 bonds	High 104 $\frac{3}{4}$	Low 104 $\frac{5}{8}$
Week May 29	Sales 55 bonds	High 104 $\frac{3}{4}$	Low 104 $\frac{5}{8}$

For the year—High, 105, April 29; Low, 102 $\frac{3}{4}$, March 5.

Last year—High, 106; Low, 102 $\frac{1}{4}$.

THE RUBBER TRADE AT AKRON.

BY A RESIDENT CORRESPONDENT.

THE tire departments of the various Akron rubber factories are all running full force at least, and many overtime. The mechanical goods departments are running well, except the various rubber goods that enter into railroad supplies, which are working less than full time.

* * *

A little over a year ago, The B. F. Goodrich Co. started a force of men out on the road placing a special guide post every three miles along main highway roads, from Cleveland to New York City. This was a beginning. Since then vans and crews have been erecting markers in all of the Eastern states, throughout the middle West, from the Mexican border the whole length of the Pacific coast, in fact, everywhere in the United States where automobiles are run. To do this, topographical maps of the United States Geological Survey were used and routes carefully planned in advance. Incidentally, the road marking crews have each a card indexing system by which they note road conditions, street and town accommodations, etc., etc. This route marking enterprise is by far the most comprehensive and original advertising campaign ever inaugurated. It also has what very little advertising propaganda possesses—a distinct and constant value to the public at large.

As a test for the Goodrich wireless tires, a five-ton motor truck with a three-ton load started in March from Denver for San Francisco, with a return trip scheduled through Salt Lake City, Chicago and New York. The tires are single in front and twin in the rear.

The moving pictures illustrating rubber gathering in South America, which The B. F. Goodrich Co. (Akron, Ohio), are showing all over the United States, are of the greatest educational value. They are most carefully prepared, are absolutely true to life, and are explained by one of the bright young men of the Goodrich staff. Needless to say crowds attend every exhibition.

* * *

A. H. Marks, general manager of the Diamond Rubber Co., is building a beautiful summer cottage at Marblehead, Mass.

The Cord tire, the production of which by the Diamond Rubber Co., has for a long time been discussed in automobile circles, has made its appearance. The tire is made and sold under exclusive rights obtained from the English manufacturers, whose product is known as the Palmer Cord Tire. The owners of the American rights will call their product the Diamond Silvertown Cord Tire.

E. L. Winipenny, formerly of New York, has gone to the Baltimore office of the Diamond Rubber Co. as travelling salesman. F. T. Luth, of Cincinnati, has gone to the Minneapolis office as travelling salesman. J. E. Ailes has resigned his position in the operating department of the Diamond and is succeeded by T. L. Lussen, of New York. J. H. Elgin has gone to the Philadelphia office to take charge of the credit and collection department. C. S. Davis is the new Diamond adjuster at Cleveland. W. A. Alexander has been transferred from the local adjusting department to the Albany office as temporary manager.

* * *

Litigation which has been carried on almost continuously during the last twelve years concerning the validity of the Grant Patent is said to have resulted in placing the Goodyear Tire and Rubber Co. in the unique position of not having to pay a royalty to the Consolidated Rubber Tire Co. on tires made under this patent. This is the result of a decision handed down by the Federal Court of Appeals at Cincinnati, Ohio, in May, 1902, which decision the United States Supreme Court, in reviewing the decision of the Appellate Court, refused to reconsider.

Up to date the Goodyear Tire and Rubber Co. has 120 branches and agencies in the United States and Canada, 15 of which have been opened this year. * * *

The Biggs Boiler Co., of Akron, Ohio, is erecting a \$50,000 factory addition. The new addition contains the boiler shop, machine shop and power plant. The building will be equipped with electric travelling cranes and hydraulic machinery. The structure will be of brick, 120 feet by 225 feet.

A leading manufacturer estimates "Akron's tire bill at \$140,000,000 annually: casings, \$77,500,000; tubes, \$34,320,000; solid tires \$28,600,000. This gives employment to 6,100 men, exclusive of administrative and executive offices, and consumes at least 12,500 tons of fabric, and 37,500 tons of rubber composition.

The various Akron rubber factories have taken on new life in their different lines of social and athletic diversions. Each company has its own star ball team, the Diamond Tire and Rubber Co. having had during the last few years a strong amateur team, Bill Swartz, manager of the Nashville Team with the Southern League, being one of its members.

The Lowenthal Co., of Akron, Ohio, scrap rubber merchants, has moved into its new warehouse at the corner of Broadway and Exchange street.

The latest Ohio corporation is the Knight Tire and Rubber Co., of Canton. G. F. Knight, of the Knight Manufacturing Co., is at the head of this new company.

Alexander Adamson, under dates of April 19, 1910, and April 4, 1911, has patented a new and improved vulcanizing press. It is built of steel and the head is fitted with a self-sealing gasket. The method of sealing the vulcanizer is claimed to be a time-saving feature.

THE RUBBER TRADE IN SAN FRANCISCO.

BY A RESIDENT CORRESPONDENT.

AMONG the merchants in the rubber trade, the consensus of opinion is that business is steady, but quiet. Conditions are not as flourishing as they might be, nor as it is expected they will be when work actually commences towards construction on the world's fair site, but there is the usual and normal run of business in the city, and the demand from all of the interior points continues good. Things now are as they have been for many months past, with the country in a more flourishing condition than the cities. Taking the coast as a whole conditions are very good in the southern part of the state, normal in San Francisco and the north, and on through Portland and nearly all of Oregon, but a little quiet in Seattle, and the major portion of Washington, outside of Spokane, which is just now a very busy city.

* * *

E. V. Carey, one of the Selangor, Federated Malay States, rubber planters in the Far East, has been a recent guest at the Palace Hotel. He is on his way from the Orient to be present in London during the coronation ceremonies.

* * *

C. E. Mathewson, Pacific coast manager of the Diamond Rubber Co., announces the opening of a direct factory branch in Sacramento, Cal., at No. 728 I street. His is the first tire factory to recognize the importance of Sacramento as a coming center for the automobile industry. The store is fully equipped with automobile tires, and with a complete repair factory.

* * *

There is a strong demand for merchandise from Japan at the present time, partially due to the tariff which goes into effect in July. R. H. Pease, Jr., of the Goodyear Rubber Co., has returned from a trip to the Orient. He states that it was a matter of surprise to him to see how extensively the Japanese are now going in for the manufacture of rubber products. They are especially active in the manufacture of packing. While at

Kobi, he attended an industrial exhibition, and there saw a complete line of packings and asbestos goods, all of Japanese manufacture. It is his opinion that the Japanese will soon have mastered the art of manufacture and that the demand for American goods will rapidly decrease. R. H. Pease, Sr., who recently returned from his eastern trip, states in regard to business conditions that he finds things running along smoothly. There is no boom, he says, but business is improving in comparison with that of last year. Naturally the boot and shoe business is a little dull, because more or less of the retail merchants are carrying over stocks. This is especially true around Portland, and in fact all through the northwest.

A. T. Kalas now handles the Globe line of the Globe Rubber Co., and has his offices at No. 1515 Main street. Mr. Kalas has been selling mining and quarry machinery and supplies for the past 18 years all along the coast, is a prominent Elk, and is well known everywhere, so that the success with this line is assured.

* * *

The Barton Packing and Rubber Co. is retiring from business, and their entire stock will be disposed of. Schwartz & Kenrick, the factory men from the Barton company now are the proprietors of the new Panama Rubber Co. Frank Seton, who was formerly with Barton, has gone with the Goodyear Rubber Co. The Barton stock has been assigned to Mr. Jones, of the Crude Rubber Co.

* * *

The Goodyear Rubber Co.'s factory on Spear street has been enlarged and improved by the addition of mixing mills, calender and tubing machinery.

* * *

The Acme Machine Works at No. 19 Tehama street, have a new kind of automobile tire. It is filled with 26 bulbs, which can all be inflated at once. When there is a puncture, one bulb at a time can be removed without touching the others. The first tire has just been turned out, manufactured at the Goodyear Rubber Co.'s factory, on Spear street.

* * *

Dales D. Tripp, a well known rubber man connected with the Bowers Rubber Works, had the antlers placed on his head Monday night at the Alameda Lodge, 1015 of the Elks.

* * *

The Gutta Percha and Rubber Manufacturing Co. report a big sale of fire hose to the city of Alameda.

* * *

Mr. Griffiths, representing the American Manufacturing Co., of Emeryville, Cal., states that his firm is doing a very good business, especially at the present time in fire hose. They were recently awarded a contract for 15,000 feet for San Francisco and 1,000 feet for the Mare Island Navy Yard.

* * *

Mr. John W. Macomb, secretary-treasurer of the New York Belting and Packing Co., who has been associated with the company for twenty-one years, has just made his first visit to the Pacific coast. He expressed his surprise and pleasure at the industrial growth and extent of the western territory.

* * *

W. J. Gorham, of the Gorham-Revere Rubber Co., reports that the firm has now recovered from the confusion which has attended the consolidation of the three stores—the Gorham, the Revere and the Pacific Coast Rubber Co., and that things are running along nicely and profitably. He has just been conferring in this city with Mr. Hamlin, manager of the Seattle store and general manager for the northwest, and E. H. Helm, manager of the Gorham-Revere Rubber Co., of Los Angeles. Mr. Gorham and Mr. Hamlin will leave today for the north, to perfect their organization there.

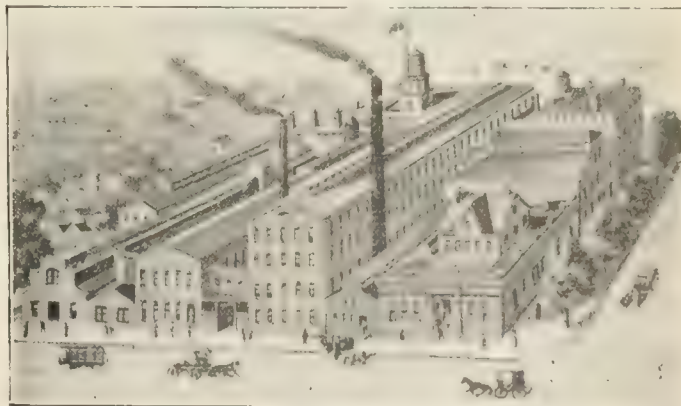
CONSHOHOCKEN'S NEW RUBBER FACTORY.

J. ELLWOOD LEE, known to the hospital trade throughout the world, has been in the rubber business more or less for many years, both in Pennsylvania and through his connection with the great firm of Johnson & Johnson, New Brunswick, New Jer-



PRESENT PLANT OF J. ELLWOOD LEE CO., CONSHOHOCKEN, PA.

sey, of which he is vice-president. It is now announced that he will branch out very extensively in rubber manufacture. To this end he has purchased the entire business of the J. Ellwood Lee Co., with two factories located at Conshohocken, Pennsylvania, for \$1,500,000. He is now organizing under the laws of the State of Pennsylvania a company to be known as the Lee



PRESENT PLANT OF J. ELLWOOD LEE CO., CONSHOHOCKEN, PA.

Tire and Rubber Co., capitalized at \$2,000,000, which will take over the entire business. Mr. Lee will be president of the new company and retains a majority of its stock. The other officers are, J. W. Johnson, of New Brunswick, New Jersey, vice-president; A. A. Garthwaite, treasurer; Samuel Wright, secretary, and M. O'B. Hallowell, assistant secretary. The company propose to sell about \$400,000 worth of 7 per cent. preferred stock, chiefly to install additional machinery for the manufacture of the "Jelco" puncture proof tires and tubes for which they own the patents. They will also produce a full line of druggists' rubber sundries. The main plant of the company, of which we give an illustration, is modern and well equipped, with the best railroad facilities.

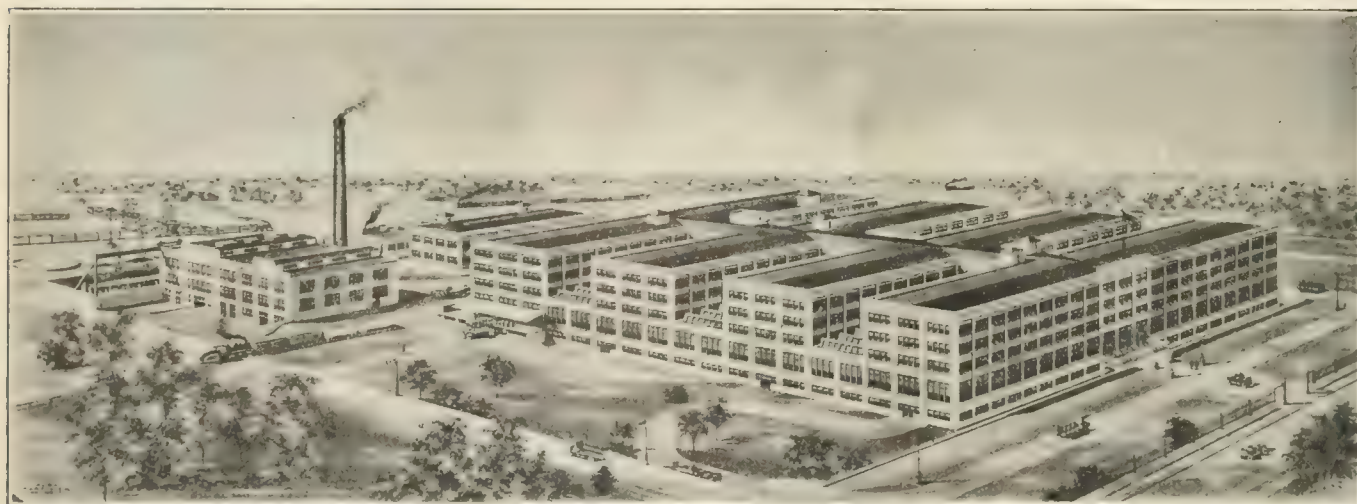
The New Firestone Plant

THE Firestone Tire and Rubber Co., of Akron, Ohio, in 1909 purchased 28 acres of land lying west of South Main street south of the Erie, C. A. & C. and B. & O. tracks and north of the Belt Line tracks. On this site they have constructed a main building 265 ft. x 360 ft., five stories high, composed of four parts and a power plant, and three auxiliary buildings, one used for a water softening plant, one for a cement house, and the other for a pumping station, and a large boiler and engine rooms, and an independent water supply system, and commodious rooms for office quarters which they expect to occupy May 1.

The main building is of steel construction with reinforced concrete. The first and second floors cover the entire ground floor space, of 265 ft. x 360 ft. The remaining stories run up 60 ft. x 265 ft., with a light court of 40 ft. between each, connected by passageways 40 ft. wide. The stair wells and elevator

water stations through a 12-ft. square passageway to the basement of the main building. This entire plant has been designed and constructed with a view of increasing its capacity at least four times when required. The company has installed an entire waterworks system of its own. Water pipes 30 ins. in diameter have been laid from a point about 250 yds. from the south end of Summit Lake, a distance of 4,000 ft., to the company's new building. The crib extends into the lake about 75 ft. from the shore, and at the lake end there is one active and one spare centrifugal motor driven pump with a capacity of 11½ million gallons every 24 hours. These De Laval pumps are driven by Allis-Chalmers motors. This water plant is complete in itself and furnishes water exclusively to the Firestone company for washing, condensing and general manufacturing purposes.

Firestone rims are manufactured in a building constructed for



THE NEW FIRESTONE PLANT.

shafts are all of the latest fireproof construction. There are sufficient inside stairways to avoid outside fire escapes. Almost three-fourths of the outside surface is glass, giving all the light possible in any construction. An automatic sprinkler system is installed throughout the building. The top floors of two buildings will be occupied by the main general offices. One-half of one of the floors of the second building will be used for restaurant and rest purposes. The remainder of the building will be used exclusively for the manufacture of solid and pneumatic tires.

The machinery is modern and up to date, including a number of machines specially designed by and for the Firestone company. The machinery is specially guarded with automatic stopping and safety devices. The three auxiliary buildings are 20 ft. x 30 ft., 30 ft. x 50 ft., and 32 ft. x 55 ft. The power plant is equipped with five 600 h. p. Sterling water tube boilers designed for 200 lb. working pressure. They are equipped with Taylor automatic stokers. The coal handling machinery consists of a Gantry crane of 50 tons per hour capacity, which elevates the coal from storage or cars to bunkers, the coal being handled by gravity from the bunkers to the stokers, and the ashes from the stokers by gravity to small cars in the basement. The prime movers in the engine room are composed of 1-800 and 1-1,600 k. w. Allis-Chalmers turbo generators. Boilers and engines are parallel with each other with a view of further extension. The wires, and water and steam pipes run from the power and

that purpose located near the old plant. This factory is not able to meet the present demands and many are being manufactured in Detroit. The entire 3½ acres of floor space of the old plant will be given over to the manufacture of rims as soon as the new plant is in operation.

THE NATIONAL ONE CENT LETTER POSTAGE Association, organized for the purpose of securing the reduction of the present two-cent rate on letters in the United States to one cent, is sending out a circular letter describing its proposed plan of action and inviting the co-operation of the press and business men in its work. The association, of which Charles William Burrows is president, and George T. McIntosh is secretary-treasurer, has its headquarters at 506 Chamber of Commerce, Cleveland, Ohio, numbers among its members many of the leading business men in the country, and proposes to prosecute an active campaign at Washington as soon as a bill providing for the lowering of the rate on first rate postage can be introduced in Congress.

"AMAX" IS TO BE THE TRADE MARK, and perhaps the name of a brand of mineral rubber produced by the American Wax Co. (Boston, Massachusetts.) They claim for their product a purity test of 99-84/100. They also inform us that manufacturers of rubber footwear, insulated wire and mold work get most satisfactory results from its use.

News of the American Rubber Trade.

GENERAL RUBBER CO.

AT the annual meeting of this company, held May 2, the following Board of Directors was chosen: Walter S. Ballou, William F. Bass, E. C. Benedict, Anthony N. Brady, Samuel P. Colt, Edgar B. Davis, James Deshler, James B. Ford, Ernest Hopkinson, H. Stuart Hotchkiss, Lester Leland, D. Lorne McGibbon, Homer E. Sawyer and Elisha S. Williams. The following officers were elected for the current year:

President—LESTER LELAND.
Vice President—WILLIAM F. BASS.
Vice President—EDGAR B. DAVIS.
Treasurer—W. H. BLACKWELL.
Assistant Treasurer—JOHN D. CARRERY.
Secretary—SAMUEL NORRIS.
Assistant Secretary—JOHN D. CARRERY.

BOSTON WOVEN HOSE AND RUBBER CO. DIVIDEND.

THE directors of the above company have declared a semi-annual dividend of three dollars per share on the preferred stock and a quarterly dividend of two dollars and a half per share on the common stock, both payable June 15 to stockholders of record June 5, 1911.

CONSOLIDATED RUBBER CO. ELECTION.

At a recent meeting of the stockholders of the Consolidated Rubber Tire Co., New York, the retiring board of directors were all re-elected, with the exception of Emerson McMillin, who was succeeded by James A. Todd. The board, as at present constituted, consists of Isaac L. Rice, Stephen Peabody, Van H. Cartmell, P. J. Goodhart, Austin M. Poole, Gustavus Maas, Frederick A. Seaman and James A. Todd.

A GOOD YEAR FOR THE GENERAL ELECTRIC COMPANY.

THE nineteenth annual report of the above company recently received and covering the year ending December 31, 1910, shows a notably satisfactory condition of the company's affairs and an excellent year's business. The sales billed, amounting to \$71,478,538, were the largest for any year in the company's history, while the total orders received—\$71,182,391—exceeded those for the year ending January 31, 1907, the largest previous year, by 17.7 per cent. The total number of orders and contracts, 338,272, exceeded all previous records. The profits for the year ending December 31, 1910 amounted to \$10,855,692.13, of which \$5,214,568 was distributed in cash dividends, at the rate of eight per cent. per annum, paid quarterly. The report comments on the growth of the company's business in all its most important phases, notably the increase in the company's foreign trade and a promising outlook for the future is predicted, as the value and advantages of electric light and power are more widely recognized.

MONATIQUE RUBBER WORKS CO.

THIS company informs us that their special grades of "naturized rubbers," which are high grade reclaimed stocks, have been so promptly taken up by the rubber manufacturing trade that they have been running their factory night and day. The factory, by the way, is erected on the historic site of the Paul Revere Brass Foundry at South Braintree, Massachusetts, on the main line of the New York, New Haven and Hartford Railroad.

HARTFORD TIRE WORKERS' DANCE.

THE Hartford Rubber Works Mutual Benefit Association held its annual entertainment and ball on May 13. Socially and as a benefit undertaking it was a highly successful affair, as may be gathered from that fact that upwards of 2,000 tickets were disposed of.

THE ANCIENT HOUSE OF HEILBURT.

THE report that Mr. F. Poel is to retire from the firm of Poel & Arnold in which the great European banking and rubber importing house of Heilburt, Symons & Co. are special partners, leads one to review the genealogy of both of the companies. The parent concern dates back to 1838 when it was established in London as Heilburt & Ruben. In 1849, one year after Ruben's death, the firm of Heilburt, Symons & Co., was formed. From then on the history is one of gradual but notable expansion. In 1856, a branch was established in Paris, one in Hamburg in 1861, New York in 1864, Pará in 1868, Liverpool in 1870, Manáos in 1885, Antwerp in 1900, Bordeaux in 1907.

The New York connection began in 1864 with E. Marcus, who retired in 1878. He was followed by C. Loewenthal and in 1881 by C. Loewenthal & Co., general partners, Heilburt, Symons & Co. being special partners, the former firm consisting of C. Loewenthal and F. H. Kalkman. Kalkman retired in 1885 and Loewenthal in 1891. In 1892 the firm of Reimers & Meyer (H. Reimers and A. Meyer) became general partners. Meyer retired in 1899 and the firm became Reimers & Co. Mr. Reimers retired in 1902. The firm of Poel & Arnold was then formed consisting of F. Poel and C. H. Arnold as general partners January 1, 1903. In 1906 August Fleischman was admitted to partnership and he retired in 1908. In 1887 the New York firm established a house in Boston and in 1903 one in Akron, Ohio.

The policy of the parent company has been to arrange that retiring partners sever their connection on the last day of the year and the firm succeeding comes into existence the day following, January 1. It is therefore probable that Mr. Poel, granting that the rumor of his retirement be not premature, will remain in his company for the balance of this year.

ESTABLISHED NINETY YEARS AGO.

WHILE the name of "Denis Crouan Fils" may be perhaps better known than "De Lagotellerie," it would, perhaps, be of interest to the trade to know that this gentleman is a son-in-law of the founder of the firm, taking over the firm after the death of Ferdinand Crouan some five years ago. Mr. de Lagotellerie is ranked amongst the highest in business and social circles throughout France and South America, and the great interest he has shown in the recent opening of a New York branch augurs well for its future. The large interests controlled by this gentleman throughout the rubber producing countries of the world make him perhaps a leading factor.

The New York managers are X. W. Obalski and E. C. Sweeney, Jr. Mr. Obalski spent the first years of his life in the rubber districts of Brazil, going from there to Nantes, that being the head office of the old firm of "Denis Crouan Fils," which his father was one of the directors. He was affiliated with the United States and Canadian markets for a period of five or six years, and became well acquainted with the most important firms there. Mr. Sweeney, after completing his education in the French Colonial College at St. Pierre Miquelon, and spending some time throughout the commercial sections of Canada, came to the United States in 1902. After joining the International Banking Corporation of this city, he rose to the position of acting auditor and teller for the above concern. This institution, with its many branches, was a good source of information as to the financing and standing of commercial houses throughout the world. In 1908 Mr. Sweeney started on his own account in the import and export business with offices at No. 64 Wall street, giving up his interests to take up the management of the newly-established branch.

MR. DAVOL'S WILDACRES FARM.

Out at Quinnessett, North Kingston, Rhode Island, is a stretch of country that is a veritable wilderness. It is very beautiful withal and furnishes excellent fishing and shooting. Here Charles J. Davol, president of the Davol Rubber Co.



CHARLES J. DAVOL AT "WILDACRES."

(Providence, Rhode Island), has purchased a large acreage and established a hot weather retreat for himself which he calls "Wildacres." A good judge of dogs; he has also installed an expert in breeding them and Wildacres Farm Kennels with their pure strain Pointers, Setters and Beagles are already well known. The illustration shows Mr. Davol and a companion on a hunting trip at Wildacres.

NEW INCORPORATIONS.

AMERICAN RUBBERFELT Co., May 11, 1911, under the laws of Delaware; authorized capital, \$125,000. Incorporators: D. B. Baker, E. F. Houze and Fred A. Rathe—all of Chicago, Ill.

Auerbach Bros. Co., May 2, 1911, under the laws of Illinois; authorized capital, \$10,000. Incorporators: Paul M. O'Donnell, Sidney Auerbach, and M. D. Auerbach. Location of principal office, No. 3101-3111 Market square, Chicago, Ill. The company has been incorporated to buy, sell and deal in rubber scrap, metal junk, etc.

Detroit Cushion Tire Co., April 11, 1911, under the laws of Michigan; authorized capital, \$100,000. Incorporators: Augustus W. Shank, William W. Tackabury, Augustus P. Mott and Elon H. Reynolds, all of Detroit, Michigan. To manufacture and sell vehicle tires and accessories.

Federal Rubber Manufacturing Company, May 12, 1911, under the laws of Wisconsin; authorized capital, \$1,000,000. Incorporators: John W. McMillan, J. G. Hardgrove and Garfield S. Canright.

Howe Baumann Balloon Co., May 16, 1911, under the laws of New Jersey; authorized capital, \$50,000. Incorporators: John Tenney, Jr., Plainfield, N. J.; Samuel Lauterbach, No. 2626 Broadway, New York City; Julius Lederer, No. 273 Dwight

street, New Haven, Conn., and Harold A. Dodge, No. 107 Clinton avenue, Newark, N. J.

Koochook Rubber Co., March 29, 1911, under the laws of Missouri; authorized capital, \$5,000. Incorporators: F. L. Huber (president and general manager), H. C. Parker and Wilfred Hearn—all of St. Louis, Mo. The company has been incorporated to buy and sell all kinds of mechanical rubber goods, automobile and electrical supplies and appliances.

Perfection Auto Tire Co., April 11, 1911, under the laws of Wisconsin; authorized capital, \$50,000. Incorporators: Frank A. Cooper, H. C. E. Quentin and W. S. Hopkins. To manufacture chemicals for filling and repairing rubber tires. Location of principal office, Milwaukee, Wisconsin.

Pines Manufacturing Co., March 24, 1911, under the laws of New York; authorized capital, \$75,000. Incorporators: Joseph Pines (president and secretary), No. 1221 Forty-second street; David Pines (treasurer), No. 364 Hopkinson avenue—both of Brooklyn, New York, and M. W. Pines, No. 2860 Burnet street, Brunswick, New Jersey. To manufacture rubber auto garments, etc. Location of principal office, New York.

Purity Supply Company, incorporated May 4, 1911, under the laws of New York; authorized capital, \$15,000. Incorporators: Frederick C. Olson, Frank B. Worden, and Benjamin P. Toles—all of Jamestown, New York. To manufacture toilet articles, syringes, rubber goods, etc. Location of principal office, Jamestown, New York.

Reality Rubber Co., March 10, 1910, under the laws of Ohio; authorized capital, \$25,000. Incorporators: E. G. Richert, E. G. Willson, S. Bert Hankins, Frank R. Hallwager and Louis A. Koons. To manufacture, purchase and deal in rubber goods and supplies.

Roberts Rubber Manufacturing Co., May 1, 1911, under the laws of New York; authorized capital, \$250,000. Incorporators: Frederick T. Roberts, No. 210 West Seventy-eighth street; Frederick L. Guggenheimer, No. 346 Broadway, and Frederick Weiner, No. 346 Broadway—all of New York City. Location of principal office, New York city.

Universal Fiber Board Company, April 24, 1911, under the laws of New York; authorized capital, \$200,000. Incorporators: John A. Lewis, John R. Taylor and Charles L. Tuttle—all of Rochester, New York. To manufacture all kinds of roofing, including rubber roofing. Location of principal office, Rochester, New York.

Vulcan Proofing Co., May 3, 1911, under the laws of New York; authorized capital, \$100,000. Incorporators: George Kenyon (secretary and treasurer), William A. Walker (president), and Harold L. Kenyon—all of No. 585 Dean street, Brooklyn, New York. This company is established for rubberizing single and double texture fabrics for waterproofs, clothing, shoes and automobile purposes. Location of principal office, Brooklyn, New York.

PERSONAL MENTION.

THE Hon. William M. Ivins is said to have been retained to assist the District Attorney in New York in prosecuting the case of the Carnegie Trust Co.

Robert B. Baird, vice-president of the Rubber Trading Co., and his son, Robert L. Baird, associated with the same company, recently took their thirty-second degree in Masonry. Both joined Kismet Temple, Mystic Shrine, Brooklyn, April 29, 1911. Robert B. Baird became a Knight Templar (York rite) in 1906, and Robert L. Baird, who is probably the youngest Mason, possessing all the degrees, in April, 1911.

Ira J. Cooper, manager of the Cincinnati, Ohio, branch of Morgan & Wright, is slated to become manager of the Cincinnati branch of the United States Tire Co., which will open large warerooms and offices July first at 120 East Eighth avenue.

THE RUBBER CLUB OF AMERICA.

The following are announced as the committees for The Rubber Club of America for 1911-12:

Nominating.—Hon. L. DeWart Apsley, chairman; Homer E. Sawyer, Charles J. Bailey, William H. Gleason; Elston E. Wadbrook, secretary.
Dinner.—Charles A. Coe, chairman; Geo. H. Mayo, Robert L. Rice, William E. Barker, Joseph W. Work.
Sports.—R. L. Chipman, chairman; R. E. Paine, E. L. Phipps, William J. Kelly, Wallace G. Page.
Entertainment.—H. R. Fuller, chairman; Charles J. Bailey, James H. Learned, George E. B. Putnam, W. L. Proctor.
Resolutions.—Henry C. Pearson, chairman; Elston E. Wadbrook, Geo. P. Whitmore.
Auditing.—William H. Gleason, chairman; J. Everett Stone.

ATTACHED FOR \$207,000.

The Diamond Rubber Co. (Akron, Ohio), having a claim against the Mexican Crude Rubber Co. (Detroit, Michigan), assigned it to Thomas S. Lindsay, of that city, who attached for \$207,654, the claim for an alleged violation of contracts in delivering guayule rubber. The contract which dated back to March, 1909, was for 750 tons of guayule, at 32 cents a pound. Up to December 22, 1910, there were delivered 469 tons, leaving a balance due of 281 tons. At that time, however, the price of guayule had advanced to 65 cents a pound, and the Diamond company, through Mr. Lindsay, sued for the difference of 33 cents a pound on the undelivered portion or \$207,654.

A NEW RUBBER COMPANY FOR ERIE, PA.

THE VULCAN RUBBER Co. has been organized at Erie, Pa., to manufacture a general line of rubber goods. The company will have \$100,000 capital stock, and the incorporators are Mayor M. Liebel, Jr., Eugene Liebel, Oil City; William Kaul, Frank Kaul and Frank Obenkirch, St. Marys, and Bernard Cochran, Erie. Property has been purchased, about six acres in extent, on which there are a number of substantial brick, iron and concrete buildings, that will be remodelled for the company's business. The necessary machinery has been ordered and the plant is expected to be in operation within two months.

PERSONAL MENTION.

Just as we go to press word comes that the American yacht *Virginia*, with Commodore E. C. Benedict of the executive committee of the United States Rubber Co., and a party of friends, went ashore off the coast of Pinar del Rio, Cuba. All on board are reported safe and it is expected that the yacht will be gotten off at high tide. The party were returning to New York from a trip up the Amazon.

Albert T. Holt has resigned as superintendent of the Whittall Tatum Co., at Keyport, New Jersey.

R. Bardewyck, representing in the United States Lehman & Voss, Hamburg, Germany, manufacturers of chemicals, etc., for the rubber trade, left for Europe on May 25, per steamer *Kaiserin Auguste Victoria*. Having been in the United States since September last, he reports business good and is making the trip to the other side for the purpose of consulting with his principals, mainly in regard to new methods of using their productions in rubber manufacturing. He proposes also to visit the rubber exhibition, which is one of the objects of his trip, but expects to return as soon as possible.

Robert L. Baird and Collier W. Baird have become associated with the Rubber Trading Co. in the capacity of salesmen, and are covering their respective territories with considerable success.

Frank H. Martin, for several years manager of the Chicago branch of the Firestone Tire and Rubber Co., has been made special representative, with headquarters at the factory. A. W. Moore, formerly on the selling force of the Chicago branch, has been placed in charge at Chicago.

John Nelson Kirk, Jr., of the Thermoid Rubber Co., Trenton, N. J., was married May 11, at All Angels Church, New York, to Miss Dorothy E. Rogers, daughter of Walter Chapman Rogers. The wedding tour included a trip north and west.

TRADE NEWS NOTES.

Announcement is made of the dissolution of the limited partnership heretofore existing between H. A. Astlett and Luis F. Morey, doing business as crude rubber importers as H. A. Astlett. Under the title of H. A. Astlett & Co., a limited partnership has been formed by H. A. Astlett, Edmund R. Hawkins, Thomas H. Ivory and J. C. Richard Merz, Luis F. Morey, special partner. The offices remain at 117 Pearl street, New York.

A contract has recently been closed under which 500 taxicabs in New York City, owned by the Mason-Seaman Transportation Co. (more generally known as the New York Taxicab Co.) will be equipped with Fisk tires and removable rims, manufactured by the Fisk Rubber Co. (Chicopee Falls, Massachusetts). Of all the taxicabs in the United States, 75 per cent. now have the Fisk rim and tire equipment.

A factory for the manufacture of rubber tiling is being put up at Kenilworth, N. J. It is understood that George Bradshaw, connected with the Eastern Reclaimed Rubber Co. (New York, is at the head of the concern.

Quite a number of prominent rubber manufacturers are at present in Europe. Among them are the Hon. L. D. Apsley, Frederic C. Hood and H. E. Raymond.

The Metal Lock Tile Co. announce the removal of their executive offices to their factory, and their address is now, Metal Lock Tile Co., Trenton, New Jersey.

Stoughton Rubber Co. are erecting, at Stoughton, Massachusetts, a reinforced concrete building, 150 x 45 feet and three stories high, on the Wilson system of mill construction. It will be divided by a fire wall, and one portion will be used for storage purposes and the balance for the manufacturer of rubber clothing.

The factory of the Joseph Banigan Rubber Co., at Olneyville, Rhode Island, purchased some time since by the Revere Rubber Co., has been started up as a separate unit devoted to the manufacture of automobile tires, the "Continentials." The old works which were large have been substantially increased by the erection of new buildings and re-arrangement of the old ones; the present plant is a complete and up-to-date tire factory.

A plastic for general compounding particularly in black goods is known as "Byerlyte." It is a pure hydrocarbon, a petroleum product, in the form of an artificial asphalt, which is said to have all the advantages of natural asphalt without its impurities and its variability. One of its strongest points is claimed to be that it can be delivered in the exact consistency desired, and hence does not need to be fluxed with the volatile ingredients that cause some asphalts to disintegrate. The makers claim for it that in connection with crude rubber it adds to the compounding quality quite considerable. It is said also to increase the tensile strength; is not affected by moisture; has no ingredients to volatilize and that it never oxidizes. It is claimed also that used with strong smelling rubbers, such as African, or in connection with some classes of reclaimed, it acts as a deodorizer.

The Crude Rubber Washing Co., Limited, with headquarters at No. 17 Mincing lane, London, E. C., England, have recently acquired the entire rubber washing department of the British Murac Syndicate, Limited, and are erecting at Edmonton new works having a capacity of 10 tons of washed and standardized rubber day. It has been claimed that by this process the large quantities of dirt, and other impurities which previously characterized many grades of rubber shipped to the continental and London markets is eliminated, and that all rubbers branded "C. R. W." are guaranteed absolutely pure virgin india-rubber, and sold under a guarantee of a certain percentage of shrinkage. This product is handled in the United States by the Wallace L. Gough Co., of No. 108 Water street, New York.

William H. Scheel, New York, manufacturers of "Black Hypo" for non-blooming black stocks, are introducing another grade of this product, to be known as Black Hypo, Special, as against the standard article, Black Hypo, Extra, and which they will supply at a much lower price than the "Extra."

SUMMARY OF MOVEMENT OF GERMAN FOREIGN TRADE IN CRUDE AND MANUFACTURED RUBBER.

[IN THOUSANDS OF DOLLARS.]								
CRUDE MATERIALS Analyzed in Tables A and B.	IMPORTS.				EXPORTS.			
	Year 1909.	Year 1910.	First quarter 1910.	First quarter 1911.	Year 1909.	Year 1910.	First quarter 1910.	First quarter 1911.
Thousands of dollars	38,445	47,000	15,909	18,309	7,926	12,710	3,250	2,748
MANUFACTURES.								
Of soft rubber (analyzed in Table C)	4,859	6,029	1,561	1,740	8,130	10,374	2,376	2,737
Of hard rubber (analyzed in Table D)	92	108	37	44	2,577	2,749	660	723
Telephone cables	319	248	93	58	11,751	11,846	3,321	3,479
Thousands of dollars	5,270	6,385	1,691	1,842	22,458	24,969	6,357	6,939

GERMAN IMPORTS OF CRUDE RUBBER, GUTTA-PERCHA AND BALATA ANALYZED.

TABLE A.—ANALYSIS.	Year 1909.		Year 1910.		First quarter 1910.		First quarter 1911.	
	Pounds.	Thousands of dollars.	Pounds.	Thousands of dollars.	Pounds.	Thousands of dollars.	Pounds.	Thousands of dollars.
India-rubber, crude or purified	34,210,880	33,694	41,151,660	40,637	10,289,840	13,891	12,331,440	16,648
Gutta-percha, crude or purified	13,057,660	3,061	19,127,680	4,477	2,905,980	1,469	2,204,400	1,115
Balata, crude or purified	1,602,040	728	1,701,040	773	469,480	315	364,760	244
India-rubber, gutta-percha and balata waste	9,261,780	758	11,312,400	925	2,053,480	187	2,703,800	246
Oil rubber and other rubber substitutes	1,790,360	204	1,639,420	188	415,360	47	495,000	56
Thousands of dollars		38,445		47,000		15,909		18,309

GERMAN EXPORTS OF CRUDE RUBBER, GUTTA-PERCHA AND BALATA.

TABLE B.—ANALYSIS.	Year 1909.		Year 1910.		First quarter 1910.		First quarter 1911.	
	Pounds.	Thousands of dollars.	Pounds.	Thousands of dollars.	Pounds.	Thousands of dollars.	Pounds.	Thousands of dollars.
India-rubber, crude or purified	8,945,640	6,918	10,846,440	11,500	3,332,340	2,975	2,671,920	2,510
Gutta-percha, crude or purified	555,280	193	617,760	192	253,220	64	98,560	57
Balata, crude or purified	408,760	193	471,680	315	141,900	73	94,820	63
India-rubber, gutta-percha and balata waste	9,658,880	577	10,362,660	669	2,262,700	132	1,254,880	110
Oil rubber and other rubber substitutes	412,940	45	276,320	34	58,520	6	97,900	8
Thousands of dollars		7,926		12,710		3,250		2,748

IMPORTS AND EXPORTS OF SOFT RUBBER MANUFACTURES

TABLE C.—ANALYSIS.	IMPORTS.				EXPORTS.			
	Year 1909.	Year 1910.	First quarter 1910.	First quarter 1911.	Year 1909.	Year 1910.	First quarter 1910.	First quarter 1911.
Rubber solution	5	8	1	2	116	197	38	42
Soft rubber paste; rubber strips unworked; gutta-percha tissue	720	1,613	414	508	302	835	160	256
Cut sheet	90	78	21	23	129	64	16	6
Rubber thread	983	718	277	286	145	190	49	65
Rubber thread with yarns	60	105	38	21	40	30	10	5
Inner tubes	140	284	57	115	...	...	...	...
Rubber hose	79	56	24	18	1,487	1,646	358	395
Rubber belting	79	73	15	27	672	765	166	194
Rubber tarpaulins .....	...	...	...	...	3	5	1	5
Rubber shoes	651	714	17	6	144	111	26	14
Solid tires	50	64	17	27	...	...	...	...
Pneumatic tires	578	720	184	243	...	...	...	...
Sheet packing	429	517	168	137	2,929	3,808	818	1,098
Piston packing	38	43	10	17	528	594	140	122
Silk fabrics with rubber thread	114	103	29	30	...	...	...	...
Other rubber fabrics	582	696	181	176	...	...	...	...
Rubber fabrics .....	...	...	47	44	1,593	2,062	584	529
Printers' blankets	5	7	3	3	15	24	3	2
Card clothing	256	230	58	57	27	48	6	3
Thousands of dollars	4,859	6,029	1,561	1,740	8,130	10,374	2,376	2,737

[German exports of inner tubes, solid and pneumatic tires, are included in the general returns for motor and cycle parts, and therefore cannot be separately shown.]

IMPORTS AND EXPORTS OF HARD RUBBER MANUFACTURES.

TABLE D.—ANALYSIS.	IMPORTS.				EXPORTS.			
	Year 1909.	Year 1910.	First quarter 1910.	First quarter 1911.	Year 1909.	Year 1910.	First quarter 1910.	First quarter 1911.
Hard rubber compound, not vulcanized .....	...	...	...	...	2	3	1	2
Dental gum	15	14	5	5	52	68	13	22
Hard rubber, sheets and rods	9	21	4	5	333	370	75	127
Hard rubber pipe stems .....	...	2	...	1	38	42	9	9
Other hard rubber goods	68	71	28	33	1,870	2,060	504	507
Unclassified .....	...	...	...	...	282	206	58	36
Thousands of dollars	92	108	37	44	2,577	2,749	660	723

Review of the Crude Rubber Market.

THE market during the past month has been dull and featureless, with the demand sluggish and a tendency towards lower quotations, in spite of the depressed figures that at present prevail. Although the price of up-river fine dropped from \$1.30 at the beginning to \$1.01 at the close of the month, the low figure did not encourage buying by consumers, who devoted their attention chiefly to the lower grades, the business done being confined principally to speculative transactions, based on the low prices and the downward movement, which shows no immediate signs of limitation.

NEW YORK QUOTATIONS.

FOLLOWING are the quotations at New York for Pará grades, one year ago, one month ago, and May 31—the current date:

PARA.	June 1, '10.	May 1, '11.	May 31, '11.
Islands, fine, new.....	225@226	118@120	96@ 97
Islands, fine, old.....	none here	120@121	98@100
Upriver, fine, new.....	240@241	126@127	99@100
Upriver, fine, old.....	242@243	130@131	105@106
Islands, coarse, new.....	95@ 96	61@ 62	58@ 59
Islands, coarse, old.....	none here	none here	none here
Upriver, coarse, new.....	160@161	89@ 90	82@ 83
Upriver, coarse, old.....	none here	92@ 93	84@ 85
Cancho (Peruvian), ball.....	155@156	94@ 95	84@ 85
Cameta.....	109@110	75@ 76	66@ 67
Caucho (Peruvian), sheet.....	none here	none here	66@ 67

PLANTATION PARA.

Fine smoked sheet.....	229@230	140@141	none here
Fine pale crepe.....	@...	140@141	114@115
Fine sheets and biscuits.....	@...	130@131	none here

CENTRALS.

Esmeralda, sausage.....	133@134	88@ 89	78@ 79
Guayaquil, strip.....	106@107	none here	none here
Nicaragua, scrap.....	128@129	87@ 88	77@ 78
Panama.....	none here	none here	none here
Mexican, scrap.....	128@129	86@ 87	77@ 78
Mexican, slab.....	none here	none here	none here
Mangaberia, sheet.....	none here	none here	none here
Guayule.....	95@100	58@ 59	48@ 49
Balata, sheet.....	@...	83@ 84	none here
Balata, block.....	@...	56@ 57	none here

AFRICAN.

Lopori ball, prime.....	none here	115@118	95@ 96
Lopori, strip, prime.....	none here	none here	none here
Aruwimi.....	none here	112@113	94@ 95
Upper Congo, ball, red.....	190@191	109@110	95@ 96
Ikelemba.....	none here	none here	none here
Sierra Leone, 1st quality.....	165@168	100@102	85@ 86
Massai, red.....	165@168	100@102	85@ 86
Soudan niggers.....	none here	none here	none here
Cameroon, ball.....	110@111	76@ 77	56@ 57
Benguela.....	none here	70@ 71	65@ 66
Madagascar, pinky.....	none here	87@ 88	77@ 78
Accra flake.....	none here	38@ 39	27@ 28

EAST INDIAN.

Assam.....	none here	none here	83@ 84
Pontianak.....	81@ 82	61@ 62	6@ 6 1/2
Borneo.....	none here	none here	none here

Late Pará cables quote:

Per Kilo.	Latest Manáos advices:	Per Kilo.
Islands, fine.....	\$4.200	
Islands, coarse.....	\$2.100	
Upriver, fine.....	\$5.200	
Upriver, coarse.....	\$2.900	
Exchange.....	16 3-16	
		Upriver, fine.....\$5.800
		Upriver, coarse.....\$3.600
		Exchange.....16 1/4

New York.

IN regard to the financial situation, Albert B. Beers (broker in crude rubber and commercial paper, No. 68 William street, New York), advises as follows: "There is practically no change in the rubber market since the report a month ago, the good demand for commercial paper having continued through May, both from city and out-of-town banks at 4 @ 4 1/2 per cent. for the best rubber names and 5 @ 5 1/2 per cent. for those not so well known."

Para.

R. O. AHLERS & Co. report [May 1]:

The market here keeps quiet, with no business of any importance being done, except in Islands rubber and caucho. For Upriver, fine, all holders stick to about 58c 11d. (\$1.44), and will not sell at less. On the other hand, the financial difficulties of holders of rubber appear now more clearly. A general meeting of all commercial houses at the Associação Commercial was discussing the last week's freer extension of drafts on aviador houses so as to allow these houses to keep their rubber in the

expectation of better prices, and a commission waited again upon the governor of the state with the request to wire to the federal government for help, i. e., for more money to be advanced through the Banco do Brazil. This bank has declared that it will keep the stock of J. Marques, i. e., not sell it at present. It does not seem very likely though that the federal government should spend more money on the valorization scheme, and the position here clearly becomes more unbearable every day.

Statistics of Para Rubber (Excluding Caucho).

	NEW YORK.			Total	Total	Total
	Fine and	Medium.	Coarse.	1911.	1910.	1909.
Stocks, March 31.....	318	78	=	396	280	451
Arrivals, April.....	373	290	=	663	536	1,405
Aggregating.....	691	368	=	1,059	816	1,856
Deliveries, April.....	251	247	=	498	673	543
Stocks, April 30.....	440	121	=	561	143	1,313
	PARA.			ENGLAND.		
	1911.	1910.	1909.	1911.	1910.	1909.
Arrivals, April.....	2,520	2,210	2,350	1,203	2,408	1,440
Stocks, March 31.....	3,630	835	1,561	1,865	540	330
Aggregating.....	6,150	3,045	3,911	3,068	2,948	1,770
Deliveries, April.....	1,990	2,785	2,976	1,598	1,848	1,050
Stocks, April 30.....	4,160	260	935	1,470	1,100	720

World's visible supply, April 30.....	7,069	3,058	3,828
Pará receipts, July 1 to April 30.....	27,190	29,230	27,670
Pará receipts of caucho, same dates.....	5,930	6,530	6,690
Afloat from Pará to United States, April 30.....	283	125	477
Afloat from Pará to Europe, April 30....	595	1,430	1,153

Rubber Receipts at Manaos.

DURING March and nine months of the crop season, for three years (courtesy of Messrs. Scholz & Co.):

	MARCH.			JULY-MARCH.		
	1911.	1910.	1909.	1910-11.	1909-10.	1908-09.
FROM—						
Rio Purús-Acre.....	1,216	1,616	533	9,061	9,105	7,866
Rio Madeira.....	224	348	309	2,696	2,956	2,794
Rio Juruá.....	710	490	578	3,398	3,622	3,686
Rio Javary-Iquitos.....	108	64	162	2,047	2,533	2,318
Rio Solimões.....	119	124	77	1,135	1,097	945
Rio Negro.....	127	95	93	368	644	483
Total.....	2,504	2,737	1,752	18,705	19,957	18,092
Caucho.....	735	1,228	967	3,642	5,187	5,039
Total.....	3,239	3,965	2,719	22,347	25,144	23,131
For Shipment From.						
Manáos.....	2,418	2,475	1,940	15,506	18,284	17,042
Pará.....	821	1,490	779	6,841	6,860	6,089
Total.....	3,239	3,965	2,719	22,347	25,144	23,131

IMPORTS FROM PARA AT NEW YORK.

The Figures Indicate Weight in Pounds.

APRIL 28.—By the steamer Tocantins, from Pará:					
	Fine.	Medium.	Coarse.	Caucho.	Total.
Laurence Johnson & Co.....	.....	.....	21,600	12,300	33,900
Henderson & Korn.....	.....	.....	.....	13,000	13,000
Poel & Arnold.....	.....	.....	11,900	10,600	22,500
Total.....	.....	.....	33,500	35,900	69,400
MAY 5.—By the steamer Frances, from Manáos and Pará:					
A. T. Morse & Co.....	195,500	26,000	30,500	30,200	382,200
Poel & Arnold.....	21,900	44,000	154,900	149,200	370,000
New York Commercial Co.....	28,100	6,800	54,900	60,900	150,700
G. Amsinck & Co.....	30,900	3,800	2,100	3,000	39,800
De Lagotellerie & Co.....	12,500	1,800	17,100	.....	31,400
Henderson & Korn.....	16,800	3,300	10,800	.....	30,900
Laurence Johnson & Co.....	3,600	.....	11,900	.....	15,500
H. A. Astlett.....	.....	.....	7,900	.....	7,900
General Rubber Co.....	.....	.....	.....	2,200	2,200
Total.....	309,300	85,700	290,100	245,500	930,600
MAY 15.—By the steamer Basil, from Manáos and Pará:					
Poel & Arnold.....	108,300	14,500	122,700	46,600	292,100
A. T. Morse & Co.....	43,900	8,800	17,100	104,600	174,400
New York Commercial Co.....	2,500	400	21,100	33,000	57,000
De Lagotellerie & Co.....	10,700	4,300	30,400	.....	45,400
Hagemeyer & Brunn.....	3,600	.....	4,000	.....	7,600
Total.....	169,000	28,000	195,300	184,200	576,500
MAY 20.—By the steamer Rio de Janeiro, from Pará:					
Poel & Arnold.....	1,500	.....	71,700	.....	73,200
New York Commercial Co.....	21,200	2,000	10,700	8,000	41,900
Total.....	22,700	2,000	82,400	8,000	115,100

PARA RUBBER VIA EUROPE.

	POUNDS.
APRIL 24.—By the <i>Celina</i> =Liverpool:	
Wallace L. Gough (Fine).....	7,000
APRIL 27.—By the <i>Celina</i> =Mollendo:	
General Rubber Co. (Fine).....	4,000
APRIL 28.—By the <i>Manzanilla</i> =Liverpool:	
Poel & Arnold (Cauchos).....	22,500
MAY 1.—By the <i>Bulgaria</i> =Hamburg:	
Rubber Trading Co. (Fine).....	9,000
MAY 3.—By the <i>Finland</i> =Antwerp:	
Muller, Schall & Co. (Fine).....	11,500
MAY 3.—By the <i>Caronia</i> =Liverpool:	
Poel & Arnold (Fine).....	35,000
Robinson & Co. (Fine).....	30,000
C. P. dos Santos (Fine).....	11,000
MAY 5.—By the <i>Lusitania</i> =Liverpool:	
Robinson & Co. (Fine).....	13,500
Raw Products Co. (Coarse).....	11,500
Henderson & Korn (Coarse).....	36,000
MAY 8.—By the <i>Celtic</i> =Liverpool:	
Henry A. Gould Co. (Fine).....	2,000
Poel & Arnold (Cauchos).....	13,500
MAY 10.—By the <i>Kroonland</i> =Antwerp:	
A. W. Brunn (Fine).....	9,000
MAY 11.—By the <i>Atvato</i> =Mollendo:	
General Rubber Co. (Fine).....	4,500
MAY 11.—By the <i>Adriatic</i> =London:	
New York Commercial Co. (Coarse).....	18,000
MAY 13.—By the <i>Campama</i> =Liverpool:	
Poel & Arnold (Fine).....	20,000
Raw Products Co. (Fine).....	11,000
Henderson & Korn (Fine).....	3,000
A. T. Morse & Co. (Cauchos).....	56,000
MAY 17.—By the <i>Carmania</i> =Liverpool:	
Poel & Arnold (Fine).....	22,500
Poel & Arnold (Coarse).....	25,000
MAY 18.—By the <i>Pennsylvania</i> =Hamburg:	
Raw Products Co. (Coarse).....	10,000
Wallace L. Gough Co. (Fine).....	7,000
MAY 19.—By the <i>Mauritania</i> =Liverpool:	
Poel & Arnold (Fine).....	20,000
Raw Products Co. (Coarse).....	22,500
Poel & Arnold (Cauchos).....	79,500

OTHER NEW YORK ARRIVALS.
CENTRALS.

[*This sign, in connection with imports of Centrals, denotes Guayule rubber.]

	POUNDS.
APRIL 22.—By the <i>Momus</i> =New Orleans:	
Eggers & Heinlein.....	4,500
Robinson & Co.....	3,500
G. Amsinck & Co.....	2,000
Manhattan Rubber Mfg. Co.....	1,000
New York Commercial Co.....	1,000
APRIL 24.—By the <i>Byron</i> =Bahia:	
J. H. Rossbach & Bros.....	56,000
APRIL 24.—By the <i>Bayamo</i> =Tampico:	
Ed. Maurer.....	*135,000
New York Commercial Co.....	*100,000 *235,000
APRIL 26.—By the <i>Prinz Eitel Friedrich</i> =Columbia:	
Kunhardt & Co.....	11,500
G. Amsinck & Co.....	7,000
Caballero & Blanco.....	5,500
Del Castillo & Co.....	1,500
Jose Julia & Co.....	1,500
Delima Cortissoz & Co.....	1,500
August A. Lindo & Co.....	1,000
APRIL 26.—By the <i>Creole</i> =New Orleans:	
A. T. Morse & Co.....	10,000
Robinson & Co.....	1,000
APRIL 26.—By the <i>Advance</i> =Colon:	
G. Amsinck & Co.....	11,000
J. Sambrado & Co.....	4,000
Dumarest Bros. & Co.....	4,000
New York Commercial Co.....	3,500
Pablo Calvet & Co.....	3,500
A. Santos & Co.....	2,000
Charles E. Griffin.....	1,500
F. Rosenstern & Co.....	1,000
A. Rosenthal & Sons.....	1,000
APRIL 27.—By the <i>Clyde</i> =Columbia:	
Isaac Brandon & Bros.....	12,500
A. M. Capen's Sons.....	7,000
Roldau & Van Sickle.....	3,000
Lauman & Kemp.....	1,500
American Trading Co.....	1,000
J. Sambrado & Co.....	1,000
G. Amsinck & Co.....	1,000
Pablo Calvet & Co.....	1,000
Delima Cortissoz & Co.....	1,000

APRIL 29.—By the <i>Mexico</i> =Vera Cruz:	
E. Nelson Tibbals & Co.....	1,000
International Products Co.....	1,000
Graham, Hinkley & Co.....	1,000
F. Steiger & Co.....	1,000
H. Marquardt & Co.....	1,000
W. L. Wadleigh.....	1,000
APRIL 29.—By the <i>Segura</i> =Tampico:	
Ed. Maurer.....	*65,000
New York Commercial Co.....	*34,000
For Hamburg.....	*34,000 *133,000
MAY 1.—By the <i>Bulgaria</i> =Hamburg:	
Raw Products Co.....	*22,500
MAY 1.—By the <i>Orange Prince</i> =Bahia:	
J. H. Rossbach & Bros.....	25,000
MAY 2.—By the <i>Aibingo</i> =Columbia:	
Caballero & Blanco.....	3,500
G. Amsinck & Co.....	1,500
Delima Cortissoz & Co.....	1,500
Pablo Calvet & Co.....	1,000
MAY 2.—By the <i>Panama</i> =Colon:	
G. Amsinck & Co.....	7,000
A. T. Morse & Co.....	3,000
Mecke & Co.....	1,000
Wessels Kulenkampff & Co.....	1,000
MAY 3.—By the <i>Prinz August Wilhelm</i> =Colon:	
G. Amsinck & Co.....	1,500
Hirzel, Feltman & Co.....	1,500
Isaac Brandon & Brothers.....	1,500
New York Commercial Co.....	1,000
MAY 5.—By the <i>Vasari</i> =Bahia:	
J. H. Rossbach & Bros.....	26,000
Poel & Arnold.....	11,000
MAY 6.—By the <i>Morro Castle</i> =Frontera:	
Iglesias Lobo & Co.....	4,500
International Products Co.....	3,000
New York Commercial Co.....	2,000
E. Steiger & Co.....	2,000
Harburger & Stack.....	2,000
Silva Bussenius & Co.....	1,500
For Havre, etc.....	7,000
MAY 8.—By the <i>Celtic</i> =Liverpool:	
Poel & Arnold.....	15,000
MAY 8.—By the <i>El Sol</i> =Galveston:	
Continental Mexican Rubber Co.....	*55,000
Charles T. Wilson.....	*15,000 *70,000
MAY 9.—By the <i>Momus</i> =New Orleans:	
Robinson & Co.....	5,000
G. Amsinck & Co.....	2,500
A. T. Morse & Co.....	1,500
T. W. Morgan.....	1,500
New York Commercial Co.....	1,000
Eggers & Heinlein.....	1,500
MAY 10.—By the <i>Matanzas</i> =Tampico:	
Ed. Maurer.....	*45,000
New York Commercial Co.....	*33,000
For Antwerp.....	*5,000 *83,000
MAY 10.—By the <i>Prinz Sigismund</i> =Columbia:	
Caballero & Blanco.....	5,000
G. Amsinck & Co.....	5,000
A. Jaranillo & Co.....	5,000
A. Rosenthal & Sons.....	2,000
R. Del Castillo & Co.....	2,000
Gillespie Bros. & Co.....	1,000
MAY 11.—By the <i>Oregon</i> =Mexico:	
H. Marquardt & Co.....	2,500
W. J. Wilson & Co.....	1,000
J. Sambrado & Co.....	1,000
MAY 11.—By the <i>Cristobal</i> =Colon:	
G. Amsinck & Co.....	10,000
New York Commercial Co.....	8,500
Kunhardt & Co.....	2,500
L. Johnson & Co.....	1,500
Eggers & Heinlein.....	1,500
Dumarest Bros. & Co.....	1,500
American Trading Co.....	1,000
Delima Cortissoz & Co.....	1,000
Henry Mann & Co.....	1,000
MAY 16.—By the <i>Eastern Prince</i> =Bahia:	
J. H. Rossbach & Bros.....	34,000
New York Commercial Co.....	11,000
MAY 17.—By the <i>Prinz Joachim</i> =Colon:	
A. Santos & Co.....	3,500
A. Jaranillo & Co.....	3,500
G. Amsinck & Co.....	2,500
A. Held.....	2,500
Manhattan Rubber Mfg. Co.....	1,500
Gillespie Bros. & Co.....	1,000
MAY 18.—By the <i>Pennsylvania</i> =Hamburg:	
J. H. Rossbach & Bros.....	22,500
Poel & Arnold.....	*5,000
MAY 18.—By the <i>Alliance</i> =Colon:	
G. Amsinck & Co.....	12,500
Piza, Nephews & Co.....	7,500
L. Johnson & Co.....	3,000
Jose Julia & Co.....	2,500
Wessels Kulenkampff & Co.....	2,000
Gillespie Bros. & Co.....	1,000

MAY 18.—By the <i>Santiago</i> =Tampico:	
New York Commercial Co.....	*67,000
Ed. Maurer.....	*45,000 *112,000
MAY 19.—By the <i>Creole</i> =New Orleans:	
Robinson & Co.....	10,000
A. T. Morse & Co.....	4,000
A. N. Rotholz.....	3,500
Eggers & Heinlein.....	3,000
MAY 20.—By the <i>Monterey</i> =Mexico:	
George A. Alden & Co.....	1,500
Mecke & Co.....	1,000
A. Klipstein & Co.....	1,000
International Products Co.....	1,000
MAY 22.—By the <i>El Cid</i> =Galveston:	
Continental-Mexican Rubber Co.....	*40,000
MAY 22.—By the <i>Jolando</i> =Bluefields:	
Manhattan Rubber Manufacturing Co.....	11,000
MAY 22.—By the <i>Bayamo</i> =Tampico:	
Continental-Mexican Rubber Co.....	*190,000
New York Commercial Co.....	*34,000
Poel & Arnold.....	*25,000
Ed. Maurer.....	*15,000
For Europe.....	*175,000 *439,000
MAY 23.—By the <i>Prinz Eitel Friedrich</i> =Colon:	
G. Amsinck & Co.....	7,000
A. Jaranillo & Co.....	7,000
Pablo Calvet & Co.....	7,000
A. Rosenthal & Sons.....	6,000
Jose Julia & Co.....	4,000
Caballero & Blanco.....	3,500
A. Santos & Co.....	3,500
Kunhardt & Co.....	3,000
A. Held.....	3,000
Roldau & Van Sickle.....	1,000
W. R. Grace & Co.....	1,000
Isaac Brandon & Brothers.....	1,000
AFRICAN.	POUNDS.
APRIL 24.—By the <i>St. Paul</i> =London:	
George A. Alden & Co.....	15,000
APRIL 24.—By the <i>Cedric</i> =Liverpool:	
James T. Johnstone.....	7,000
Rubber Trading Co.....	3,500
APRIL 25.—By the <i>Mars</i> =Lisbon:	
Wallace L. Gough.....	11,500
Muller Schall & Co.....	11,000
MAY 1.—By the <i>New York</i> =London:	
General Rubber Co.....	27,000
Robinson & Co.....	7,000
MAY 1.—By the <i>Bulgaria</i> =Hamburg:	
George A. Alden & Co.....	120,000
General Rubber Co.....	34,000
Poel & Arnold.....	22,500
A. T. Morse & Co.....	20,000
Robert Badenhop.....	14,200
Wallace L. Gough.....	5,000
MAY 1.—By the <i>Baltic</i> =Liverpool:	
George A. Alden & Co.....	7,000
A. W. Brunn.....	7,000
James L. Johnstone.....	2,000
MAY 3.—By the <i>Finland</i> =Antwerp:	
A. T. Morse & Co.....	37,000
Robinson & Co.....	7,000
Poel & Arnold.....	2,000
MAY 3.—By the <i>Caronia</i> =Liverpool:	
C. P. dos Santos.....	9,000
George A. Alden & Co.....	4,500
MAY 8.—By the <i>Philadelphia</i> =London:	
General Rubber Co.....	13,500
MAY 8.—By the <i>Celtic</i> =Liverpool:	
Poel & Arnold.....	22,500
George A. Alden & Co.....	17,000
James T. Johnstone.....	11,000
Henry A. Gould Co.....	2,500
MAY 8.—By the <i>Bretagne</i> =Havre:	
Poel & Arnold.....	115,000
MAY 8.—By the <i>Amerika</i> =Hamburg:	
Poel & Arnold.....	65,000
A. T. Morse & Co.....	56,000
Rubber Trading Co.....	15,000
George A. Alden & Co.....	8,000
Robert Badenhop.....	5,400
MAY 10.—By the <i>Kroonland</i> =Antwerp:	
A. T. Morse & Co.....	60,000
Rubber Trading Co.....	22,500
Robert Badenhop.....	15,000
Poel & Arnold.....	9,000
MAY 15.—By the <i>St. Louis</i> =London:	
George A. Alden & Co.....	26,000
General Rubber Co.....	11,000
Poel & Arnold.....	9,000
MAY 17.—By the <i>Carmania</i> =Liverpool:	
Poel & Arnold.....	22,500
A. W. Brunn.....	5,500
James T. Johnstone.....	2,500

MAY 18.—By the <i>Oceanic</i> =London:	
George A. Alden & Co.....	9,000
MAY 18.—By the <i>Pennsylvania</i> =Hamburg:	
A. T. Morse & Co.....	15,000
General Rubber Co.....	17,000
Wallace L. Gough.....	15,000
George A. Alden & Co.....	11,000
Poel & Arnold.....	9,000
Rubber Trading Co.....	2,500
Robert Badenhop.....	3,400
	72,900
MAY 19.—By the <i>Mauretania</i> =Liverpool:	
Poel & Arnold.....	11,500
MAY 22.—By the <i>Kaiserin Auguste Victoria</i> =Hamburg:	
George A. Alden & Co.....	40,000
Poel & Arnold.....	34,000
A. T. Morse & Co.....	11,000
	85,000
MAY 22.—By the <i>Cedric</i> =Liverpool:	
Poel & Arnold.....	15,000
James T. Johnstone.....	5,500
	20,500
MAY 23.—By the <i>Vaderland</i> =Antwerp:	
A. T. Morse & Co.....	35,000
Wallace L. Gough.....	8,000
Raw Products Co.....	7,000
	50,000
MAY 23.—By the <i>Minnehaha</i> =London:	
George A. Alden & Co.....	35,000
Poel & Arnold.....	11,000
Muller Schall & Co.....	30,000
	76,000

EAST INDIAN.

[*Denotes plantation rubber.]

APRIL 24.—By the <i>St. Paul</i> =London:	
Poel & Arnold.....	*13,500
New York Commercial Co.....	*11,500
	*25,000
APRIL 24.—By the <i>Minneapolis</i> =London:	
Ed. Maurer.....	*6,500
James T. Johnstone.....	*4,500
	*11,000
APRIL 24.—By the <i>Rauenfels</i> =Colombo:	
A. T. Morse & Co.....	*27,000
Poel & Arnold.....	*22,000
New York Commercial Co.....	*20,000
Thomsen & Co.....	*9,000
	*78,000
APRIL 26.—By the <i>Vaderland</i> =Antwerp:	
A. T. Morse & Co.....	*3,000
Ed. Maurer.....	*5,000
	*8,000
APRIL 28.—By the <i>Teutonic</i> =London:	
New York Commercial Co.....	*25,000
APRIL 28.—By the <i>Braemar</i> =Singapore:	
Ed. Maurer.....	*9,000
MAY 1.—By the <i>New York</i> =London:	
New York Commercial Co.....	*77,000
Poel & Arnold.....	*45,000
James T. Johnstone.....	*3,500
	*125,500
MAY 2.—By the <i>Finland</i> =Antwerp:	
Robert Badenhop.....	2,200
MAY 4.—By the <i>Pagenturm</i> =Colombo:	
A. T. Morse & Co.....	*30,000
Poel & Arnold.....	*20,000
	*50,000
MAY 4.—By the <i>Majestic</i> =London:	
New York Commercial Co.....	*40,000
Poel & Arnold.....	*25,000
	*65,000
MAY 5.—By the <i>Kasenga</i> =Colombo:	
New York Commercial Co.....	*22,500
A. T. Morse & Co.....	*4,500
	*27,000
MAY 5.—By the <i>Lusitania</i> =Liverpool:	
William H. Stiles.....	*11,500
New York Commercial Co.....	*2,000
	*13,500
MAY 8.—By the <i>Minneapolis</i> =London:	
Ed. Maurer.....	*11,500
A. T. Morse & Co.....	*6,500
Robinson & Co.....	*9,000
	*27,000

MAY 8.—By the <i>Belitiana</i> =Colombo:	
New York Commercial Co.....	*65,000
A. T. Morse & Co.....	*55,000
James T. Johnstone.....	*8,000
	*128,000
MAY 8.—By the <i>Celtic</i> =Liverpool:	
Rubber Trading Co.....	*11,500
MAY 8.—By the <i>Philadelphia</i> =London:	
Poel & Arnold.....	*35,000
New York Commercial Co.....	*11,500
Ed. Maurer.....	*4,500
	*51,000
MAY 10.—By the <i>Kroonland</i> =Antwerp:	
A. T. Morse & Co.....	*60,000
Robert Badenhop.....	*2,500
	*62,500
MAY 11.—By the <i>Adriatic</i> =London:	
New York Commercial Co.....	*22,500
Poel & Arnold.....	*22,500
Poel & Arnold.....	2,500
	47,500
MAY 15.—By the <i>St. Louis</i> =London:	
New York Commercial Co.....	*50,000
Poel & Arnold.....	*65,000
James T. Johnstone.....	*9,000
Ed. Maurer.....	*5,500
Robert Badenhop.....	*2,000
	*131,500
MAY 15.—By the <i>Minnetonka</i> =London:	
A. T. Morse & Co.....	*40,000
General Rubber Co.....	*25,000
Ed. Maurer.....	*8,000
Robert Badenhop.....	*8,000
Robinson & Co.....	*7,000
James T. Johnstone.....	*5,000
	*93,000
MAY 15.—By the <i>Lapland</i> =Antwerp:	
A. T. Morse & Co.....	*7,000
MAY 15.—By the <i>Arserturm</i> =Colombo:	
New York Commercial Co.....	*45,000
A. T. Morse & Co.....	*34,000
L. Littlejohn & Co.....	*10,000
Poel & Arnold.....	*9,000
	*98,000
MAY 17.—By the <i>Oceanic</i> =London:	
Poel & Arnold.....	*56,000
New York Commercial Co.....	*26,000
William H. Stiles.....	*15,000
	*97,000
MAY 18.—By the <i>Pennsylvania</i> =Hamburg:	
Rubber Trading Co.....	*11,000
MAY 20.—By the <i>Satsuma</i> =Singapore:	
Haebler & Co.....	40,000
Poel & Arnold.....	11,000
Wallace L. Gough.....	11,000
Ed. Maurer.....	*9,000
	71,000
MAY 23.—By the <i>Minnehaha</i> =London:	
New York Commercial Co.....	*37,000
Poel & Arnold.....	*34,000
A. T. Morse & Co.....	*30,000
James T. Johnstone.....	*9,000
	*110,000
MAY 23.—By the <i>Vaderland</i> =Antwerp:	
Robert Badenhop.....	3,700

GUTTA-JELUTONG.

POUNDS.

APRIL 28.—By the <i>Braemar</i> =Singapore:	
L. Littlejohn & Co.....	210,000
Wallace L. Gough Co.....	125,000
A. W. Brunn.....	65,000
George A. Alden & Co.....	30,000
	430,000
MAY 20.—By the <i>Satsuma</i> =Singapore:	
Wallace L. Gough Co.....	110,000
L. Littlejohn & Co.....	110,000
Haebler & Co.....	125,000
A. W. Brunn.....	55,000
	400,000
GUTTA-PERCHA.	POUNDS.
APRIL 28.—By the <i>Braemar</i> =Singapore:	
L. Littlejohn & Co.....	22,500
Ed. Maurer.....	35,000
	57,500
MAY 1.—By the <i>Bulgaria</i> =Hamburg:	
Robert Soltau & Co.....	7,000
MAY 20.—By the <i>Satsuma</i> =Singapore:	
Haebler & Co.....	67,000
L. Littlejohn & Co.....	33,000
	100,000

BALATA.

APRIL 24.—By the <i>Minneapolis</i> =London:	
Ed. Maurer.....	15,000
MAY 1.—By the <i>Coppenname</i> =Demerara:	
Middleton & Co.....	10,000
Charles E. Griffin.....	1,500
Frame & Co.....	1,000
	12,500
MAY 11.—By the <i>Grenada</i> =Trinidad:	
G. Amsinck & Co.....	8,000
MAY 11.—By the <i>Cristobal</i> =Colon:	
Eggers & Heinlein.....	8,000
Bartling & De Leon.....	2,000
	10,000
MAY 15.—By the <i>Kroonland</i> =Demerara:	
American Trading Co.....	6,000
Middleton & Co.....	6,000
Ed. Maurer.....	2,000
	14,000
MAY 22.—By the <i>Marowijne</i> =Trinidad:	
Middleton & Co.....	3,500
Iglesias Labo & Co.....	3,500
	7,000

CUSTOM HOUSE STATISTICS.

PORT OF NEW YORK—APRIL.

Imports:	Pounds.	Value.
India-rubber.....	5,238,901	\$5,458,263
Balata.....	111,868	83,279
Gutta-percha.....	239,612	66,893
Gutta-jelutong (Pontianak).....	1,822,024	102,266
Guayule.....	1,145,076	489,922
Total.....	8,557,481	\$6,200,623
Exports:		
India-rubber.....	199,787	\$173,564
Balata.....	.....	.....
Gutta-percha.....	.....	.....
Guayule.....	65,433	34,950
Reclaimed rubber.....	131,564	16,932
Rubber scrap, imported.....	720,908	\$59,430
Rubber scrap, exported.....	551,542	64,588

BOSTON ARRIVALS.

MARCH 1.—By the <i>Devonian</i> =Liverpool:	
George A. Alden & Co (Africans).....	5,300
MARCH 5.—By the <i>Inverclyde</i> =Singapore:	
For order (East Indian).....	30,000
For order (Jelutong).....	175,000
	205,000
MARCH 12.—By the <i>Michigan</i> =Liverpool:	
L. Sutro (Africans).....	2,500
MARCH 15.—By the <i>Patricia</i> =Hamburg:	
George A. Alden & Co (Africans).....	2,000
MARCH 26.—By the <i>Indrasamha</i> =Singapore:	
State Rubber Co. (Jelutong).....	450,000
L. Littlejohn & Co. (Jelutong).....	165,000
Geo. A. Alden & Co. (Jelutong).....	55,000
	670,000
MARCH 28.—By the <i>Bohemian</i> =Liverpool:	
Poel & Arnold.....	2,000
APRIL 5.—By the <i>Sachem</i> =Liverpool:	
Geo. A. Alden & Co. (Africans).....	2,200
APRIL 13.—By the <i>Livernia</i> =Liverpool:	
Poel & Arnold (Africans).....	12,000
APRIL 13.—By the <i>Katuna</i> =Singapore:	
State Rubber Co. (Jelutong).....	110,000
L. Littlejohn & Co. (Jelutong).....	150,000
Wallace L. Gough (East Indian).....	8,700
	268,700
APRIL 20.—By the <i>Zeeland</i> =Liverpool:	
L. Sutro (Africans).....	5,300

PARA EXPORTS OF INDIA-RUBBER, MARCH, 1911 (IN KILOGRAMS).

NEW YORK.					EUROPE.					TOTAL.	
EXPORTERS.	Fine.	Medium.	Coarse.	Caucho.	TOTAL.	Fine.	Medium.	Coarse.	Caucho.	TOTAL.	TOTAL.
Gruner & Co.....	35,700	17,170	85,379	436	138,685	90,846	7,485	29,840	47,638	175,809	314,494
E. Pinto Alves & Co.....	45,123	2,849	111,460	7,049	166,481	57,775	3,716	9,715	18,485	89,691	256,172
J. Marques.....	6,970	340	2,310	.....	9,620	194,916	35,013	12,194	3,503	245,626	255,246
Adelbert H. Alden, Ltd.....	77,115	.....	.....	.....	77,115	11,985	1,275	55,957	36,300	105,517	182,632
Scholz, Hartje & Co.....	3,230	680	14,520	330	18,760	28,232	2,050	12,801	44,220	87,303	106,063
Suarez Hermanos & Co., Ltd.....	.....	.....	.....	.....	.....	74,552	1,252	5,552	19,202	100,558	100,558
R. O. Ahlers & Co.....	.....	.....	.....	15,836	15,836	38,973	.....	3,456	13,732	56,161	71,997
Pires Teixeira & Co.....	7,480	340	4,620	330	12,770	16,490	.....	4,290	20,130	20,130	20,130
Gordon & Co.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	15,975	15,975
De la Riviere & Co.....	.....	.....	.....	.....	.....	9,467	1,315	5,193	.....	.....	14,190
A. de Lagotellerie & Co.....	.....	.....	14,190	.....	14,190	.....	.....	273	.....	4,529	4,529
Braca Sobrino & Co.....	.....	.....	.....	.....	.....	3,859	397	6,600	47,084	74,764	74,764
Sundries.....	.....	.....	.....	.....	.....	20,740	340	405	15,145	15,145	15,145
Itacoatiara, direct.....	.....	.....	.....	.....	.....	10,360	900	3,480	.....	.....	.....
Manaos, direct.....	89,909	49,544	49,338	49,342	238,133	755,584	119,246	230,117	254,124	1,359,071	1,597,204
Iquitos, direct.....	3,399	769	1,685	3,176	9,029	36,106	3,359	19,670	46,365	105,500	114,529
Total, March, 1911.....	268,926	71,692	283,502	76,499	700,619	1,349,885	176,348	399,138	551,188	2,476,559	3,177,178
Total, February, 1911.....	462,123	111,594	454,235	113,921	1,141,873	1,477,804	201,533	330,181	608,595	2,618,113	3,759,986
Total, January, 1911.....	728,494	157,522	563,542	245,226	1,694,784	884,484	117,265	123,838	287,438	1,413,025	3,107,809



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JUNE 1, 1911.

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Amsterdam.

F. JOOSTEN reports [May 4]:

The result of the tender sale on May 3 was partly unsatisfactory as about 7,956 kilos, of the approximately 14,800 kilos offered, found buyers. For the better grades, competition was strong and several lots of *Hevea* crepe and sheets as well as Rambong ball fetched high prices, far above foreign parity. The other grades, however, were neglected. Only in a few instances owners refused to accept the lower prices offered in consequence of the declining tendency of the market generally.

Liverpool.

WILLIAM WRIGHT & Co. report [May 1]:

Fine Pará.—Owing mainly to the inaction of the syndicate, in addition to a poor trade demand, prices declined from 6s. 2d. [= \$1.50] to 4s. 9d. [= \$1.16]; this lower price, however, induced a trade inquiry, and prices subsequently advanced to 5s. 3½d. [= \$1.29], closing steady thereat. All sorts of rumors are current as to what the syndicate will or will not do. Until some definite course of action is decided on we shall continue to have uncertain markets, but we venture to think that present rates are worth some attention from the manufacturers' point of view. Closing value: *Uprievi*, 5s. 3½d.

Plantation Rubber from the Far East.

EXPORTS OF CEYLON GROWN RUBBER.
[From January 1 to April 10, 1910 and 1911. Compiled by the Ceylon Chamber of Commerce.]

	1910.	1911.
To Great Britain	342,945	783,172
To United States	312,693	545,374
To Belgium	8,472	83,152
To Australia		12,613
To Japan		11,953
To Canada	1,911	9,971
To Germany	6,683	6,833
To Italy	452	750
To Holland		100
To India		40
Total	673,156	1,453,958
[Same period 1909—252,039; same 1908—157,123.]		

TOTAL EXPORTS FROM MALAYA.

[From January 1 to dates named. Reported by Barlow & Co., Singapore. These figures include the production of the Federated Malay States, but not of Ceylon.]

FROM—	1909.	1910.	1911.
Singapore (to March 30)	574,490	780,912	1,401,645
Penang (March 4)	496,971	330,267	847,722
Port Swettenham (March 2)	1,329,538	2,479,933	
Total	1,071,461	2,440,717	4,729,300

Antwerp.

RUBBER ARRIVALS FOR APRIL.

DETAILS.	1911.	1910.	1909.	1908.	1907.
Stocks, March 31.....kilos	645,614	499,102	595,855	1,136,892	725,538
Arrivals in April.....	260,377	429,870	330,277	211,549	304,873
Congo sorts	131,553	340,456	219,645	175,000	228,927
Other sorts	134,824	89,414	110,632	36,549	74,946
Aggregating	911,991	928,972	926,132	1,348,441	1,030,411
Sales in April.....	312,877	458,504	318,345	630,523	568,838
Stocks, April 30.....	599,114	470,468	607,787	717,913	461,573
Arrivals since January 1.....	1,536,045	1,469,549	1,458,369	1,729,358	1,637,631
Congo sorts	1,072,515	1,171,286	1,001,032	1,522,423	1,381,092
Other sorts	463,530	298,263	457,337	206,935	256,539
Sales since January 1.....	1,525,143	1,540,593	1,446,317	2,018,339	1,834,242

RUBBER ARRIVALS FROM THE CONGO.

APRIL 19. By the steamer *Leopoldville*:

Bunge & Co.	(Société Générale Africaine) kilos	54,900
Do	(Comptoir Commercial Congolais)	7,400
Do	(Belgika)	700
Do	(Comité Spécial Katanga)	4,200
Do	(Alberta)	500
Société Coloniale Anversoise.....	(Belge du Haut Congo)	4,400
Do	(Cie. du Kasai)	59,600
Do	(Cie. du Lomami)	6,000
L. & W. Van de Velde		11,000
Charles Dethier	(American Congo Co.)	1,900 150,600

MAY 10.—By the steamer *Bruxellesville*:

Bunge & Co.	(Société Générale Africaine) kilos	72,700
Do	(Chemins de fer Grands Lacs)	3,600
Do	(Comptoir Commercial Congolais)	28,200
Do	(Comité Spécial Katanga)	2,000
Do	(Alberta)	160
Société Coloniale Anversoise.....	(Sud Cameroen)	9,000
Do		180
L. & W. Van de Velde.....	(Cie. du Kasai)	81,000
Do	(Société Com. and Financ. Africaine)	4,000
Do		3,000
Charles Dethier.....	(American Congo Co.)	1,700
Do	(Société Comm. and Minière du Congo)	1,150
Willart frères		1,500
Cassart & Henrion		750 208,940

Rubber Scrap Prices.

LATE NEW YORK quotations—prices paid by consumers for carload lots, per pounds—are practically unchanged as follows:			
Old rubber boots and shoes—domestic..	9½@ 9½	9¾@ 9½	
Old rubber boots and shoe—foreign..	9 @ 9½	9¼@ 9¾	
Pneumatic bicycle tires.....	4½@ 4¾	4½@ 4¾	
Automobile tires	8½@ 8½	8¾@ 9½	
Solid rubber wagon and carriage tires	8½@ 9	9½@ 10	
White trimmed rubber.....	11 @ 11½	11 @ 11½	
Heavy black rubber.....	4¾@ 5¼	4¾@ 5¼	
Air brake hose	4¾@ 5	4¾@ 5	
Garden hose	2 @ 2¼	2 @ 2¼	
Fire and large hose	2½@ 2¾	2½@ 2¾	
Matting	1 @ 1½	1 @ 1½	

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GUTTA-PERCHA

Edited by HENRY C. PEARSON—Offices, No. 15 West 38th Street, NEW YORK.

Vol. XLIV. No. 4.

JULY 1, 1911.

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 The Berlin Rubber Manufacturing Co., Limited, Berlin, Ont.
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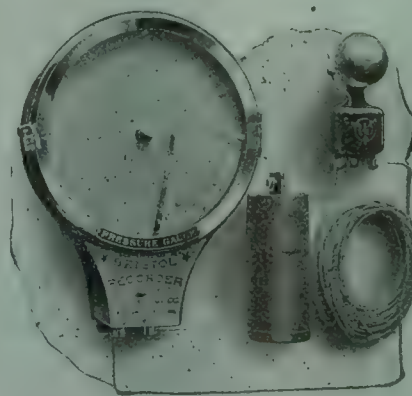
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Published on the 1st of each Month by

THE INDIA RUBBER PUBLISHING CO

No. 15 West 38th Street, New York.

CABLE ADDRESS: IRWORLD, NEW YORK.

HENRY C. PEARSON, Editor

Vol. 44.

JULY 1, 1911.

No. 4

SUBSCRIPTIONS: \$3.00 per year, \$1.75 for six months, postpaid, for the United States and dependencies and Mexico. To the Dominion of Canada and all other countries, \$3.50 (or equivalent funds) per year, postpaid.

ADVERTISING: Rates will be made known on application.

REMITTANCES: Should always be made by bank or draft, Postoffice or Express money orders on New York, payable to THE INDIA RUBBER PUBLISHING COMPANY. Remittances for foreign subscriptions should be sent by International Postal Order, payable as above.

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Entered at New York postoffice as mail matter of the second class.

TABLE OF CONTENTS ON LAST PAGE OF READING.

THE SECOND INTERNATIONAL EXHIBITION.

AS WE go to press the International Rubber Exhibition at the Royal Agricultural Hall, London, is in full swing. Opening, as it did, two days after the brilliant coronation ceremonies which drew to London the greatest crowds in the history of the city of pageants, there is a wonderfully augmented attendance at the Rubber Exhibition.

A list of those present, representatives of foreign governments, of tropical colonies, of great planting interests in Asia, Africa and the Americas, of the rubber manufacturing interests present as exhibitors and visitors, of crude rubber exhibitions, of machinery, tools and appliances, would fill this paper from cover to cover.

We, therefore—particularly as the exhibition is now on and will not be a thing of the past until July 7—simply note its successful beginning, and shall later make a synopsis of its various and important accomplishments.

A RUBBER EXCHANGE FOR NEW YORK.

AN ACTIVE and very capable member of the New York Produce Exchange, who, by the way, is familiar with the rubber business, has for some months been urging members of the rubber trade to get together and have rubber listed. For some time there was but little response, but it is now said that a rubber broker has taken the matter up, and that several firms have signified their willingness to apply for membership in the Exchange.

There are, of course, objections to the plan. For example, the sale of rubber options is speculation, pure and simple. But, buying a commodity that fluctuates from \$1.00 to \$3.00 a pound and making it up into goods is speculation, or more accurately, it is often gambling. Maybe by introducing another game of chance there will be the opportunity for manufacturers to "hedge" on their crude rubber bets. The large crude rubber importers do not seem to be in favor of the plan, as they foresee endless trouble in deliveries on the proposed "exchange contracts."

At its best an exchange is a wonderful help to any great industry. At its worst, it fosters speculation in its most dangerous form because it is so respectable. It may also bring here just such happenings as were observed during London's "Rubber Craze."

Rubber stands almost alone in the United States among raw materials in not being listed. Perhaps it is time it came out of its seclusion and into the light of the commercial day. If it is the wish of the trade, and its need is proven, listing will be a fact very soon.

WASTE RUBBER AND WASTED RUBBER.

SO LARGE a part of the worn out rubber goods is gathered by the world's junk dealers and comes back as reclaimed rubber that the popular idea is that none of it is lost. An analysis of the lines that go out as manufactured goods and return as waste rubber, reveals the fact that many hundreds of tons of both high and low grade goods are never recovered. Moreover, in the goods that are recovered, there are surfaces that are worn down so that a considerable percentage of the rubber itself has disappeared. Hence we have two classes, not of waste, but of wasted rubber—First, that which by attrition has been powdered and lost, and Second, that which through a variety of causes, such as difficulty of collecting profitably, is never brought to the reclaimers.

In the first class may be found automobile and bicycle tires. A French chemist recently analyzed the dust of the streets in Paris and found a considerable percentage of rubber dust. This undoubtedly came from cab and automobile tire treads. An examination of worn out tires at any reclaiming mill will develop the fact that in nearly all cases the tire has lost from 5 to 10 per cent. of its actual rubber through the wearing off of the tread. The friction gum is all there, the inner tubes show little loss, but the tread of the shoe has lost in substance and in weight. In rubber belting, the same sort of wear is just as noticeable, but the "tread" or cover is thinner and in spite of the fact that both sides wear off, the loss is no larger proportionately than in the motor tire. In matting, stair treads, and tiling, the wear is exceedingly uneven. Some portions lose as much as 70 per cent., being worn down to a thin skin of rubber. Others show hardly any surface loss. An estimated loss of 20 per cent. in weight would be ample to cover this line. In hose, the actual percentage of loss is small, not more than 5 per cent. In footwear the surfaces that wear thin are sole and heel chiefly, and as the weight is largely in those portions, the loss will average 15 per cent. It is in solid tires for trucks, as well as for light vehicles, that the most distinctive wearing out occurs. Very few come back with their outline preserved, most are worn half the way down, many show that they have been run long after the cushioning effect of the rubber has disappeared. Certainly 30 per cent. of the rubber in solid tires is ground off and lost in use. Wringer rolls show a very decided loss, sometimes as much as 40 per cent., but the average will not be more than 20. In large rolls, such as squeeze and couch rolls, the surface does not as a rule show a great amount of wear as compared with tires, for example, but it is there just the same, and of the portions examined it would be safe to figure a weight shrinkage of 20 per cent.

There are, of course, goods that are worn out but show no appreciable loss in weight, water bottles, bulbs (surface clothing and carriage cloth, when reclaimed), hard rubber, etc.

As for the goods that are absolutely lost from a reclaiming standpoint the moment they leave the factory their name is legion. Dentists and stamp makers return but little for recovery. A very little dental dam is recovered, but tooth plates never come back, nor do the millions of rubber stamps for mercantile work, for pottery, etc.

Tons of cement are used in the manufacture of

leather shoes, none of it is recoverable except small lots of "cement balls"—the drippings when the cement is applied.

Porous plasters use considerable high-grade rubber, but the gatherer of waste has not yet begun upon the thousands who wear them to buy their cast offs.

Of the goods rarely seen in any waste rubber heap are erasers, pencil tips, stoppers, chair tips, small plumbers' specialties, jar rings, dress shields, sponges, football bladders, toy balloons, rubber bands, elastic webbing, rubber heels, minor auto accessories, the smaller druggists sundries, and thousands of specialties.

A third wastage even of rubber goods might be added, as, for example, goods that have perished, that is, where the rubber has been so oxidized as to be absolutely worthless, so that it is a complete loss. In this same class belong goods lost at sea, thrown away in places inaccessible to the junk man, lost in conflagrations, and put to permanent use for which they were not designed. An instance of the last named is the use of fire hose for motor boat buffers, and for ramps in city stables. It is thus evident that there is still a field for the alert gatherer of waste rubber, as well as an increased supply and new problems for the reclaimer. So much progress has been made in the past 20 years in taking up one line of waste after another, and in the face of failure finally turning out merchantable products, that he would be most self-assured who would predict that any or all of the neglected or wasted lines would not one day be recovered. Indeed, who shall say that the dust of the cities will not eventually give up its percentage of "crumb" for use in the arts?

THE "LOAN SHARK" AND EMPLOYEES.

IT IS our impression that the salary loan shark has but little hold on employees in American rubber factories and agencies. However that may be, because of an urgent request and for the general good we draw attention to a recent meeting held in New York under the joint auspices of the Merchants' Association of New York and the Russel Sage Foundation, to consider means of improving prevalent conditions in regard to the loaning of money in small sums to salaried people, incidentally to combat the "loan shark" evil. Henry R. Towne, president of the first-named organization, occupied the chair, and in brief addresses the subjects under consideration were pre-

sented and discussed, the result of the deliberations being the adoption of the following resolutions:

First. That employers rescind rules of discharge in order to assist employees in resisting unreasonable interest charges and deprive money-lenders of the power of extortion.

Second. That all employers disregard claims filed by money-lenders against the wages of employees, not in direct compliance with law, the employers to interest themselves in assisting employees involved with loan sharks.

Third. That, in self-interest, as well as for the benefit of their employees, all large employers of labor encourage and assist in the creation of co-operative savings and loan associations in their respective establishments.

Fourth. That laws be enacted which will allow a reasonable rate of interest on all small loans and provide for the licensing of money-lenders and the efficient supervision and control of such licensees, preferably under the supervision of the State Banking Department.

A. H. Ham, agent of the Russell Sage Foundation, spoke on the usurious loan business, its extent—about \$20,000,000 annually in New York alone—and the exorbitant interest extorted—about 100 per cent. on the sum invested. He explained that with the fear of discharge threatening the employee in the event of default, the risk of loss to the lender was very small.

Walter S. Heilbron described the practice of the firm employing him as superintendent, in refusing to honor a loan assignment, where the provisions of the law in regard to the filing of the loan have not been strictly complied with; other speakers following on the same lines. The establishment by firms, among their employees, of co-operative associations for the purpose of making small loans to deserving employees at reasonable interest, was advocated by several speakers, as was also the enactment of laws to govern the money loaning business. S. T. Simonds, manager of the Savings and Loan Department of the Celluloid Club, at Newark, N. J., described the beneficial results attending the operations of that institution.

The objects of the meeting will commend themselves to all large employers of labor, as a means of counteracting an influence that works only for evil and that has, in many instances, shown its demoralizing effect on the working forces of important industrial establishments.

SYNTHETIC SHEETINGS.

COTTON FABRICS are almost, if not quite as much of a factor, in most lines of rubber manufacture as is rubber itself. Hence, when one ponders

over the manufacture of sheetings, of ducks, and drills, and the like, the thought is certain to obtrude itself that some of the weaknesses and disadvantages that are inherent to woven fabrics of cotton might be obviated by the substitution of something better. All the cotton fabric does is to add strength. It is not as plastic, as durable, as waterproof, as rot proof, nor as strong as rubber. It keeps it from stretching and that is about all. It must be carefully covered by the rubber to keep out moisture; indeed, it must be vacuum dried, stretched, picked, singed and generally fussed over to make it do its work in connection with rubber at all.

It is this preparatory work for something that is not ideal that leads one to doubt if there be not something far more adaptable and efficient. To follow the raw cotton from the tiny ball of fluff, often hand picked, through the many processes of ginning, cleaning, combing, twisting, spinning, and weaving, is to be more and more impressed with the crudity of the whole industry. The clatter of the billion shuttles in the vast cotton mills, is no longer the hum of industry, but nature's vociferous protest against needless effort.

What rubber manufacture needs is a fabric product that can be forced out of a spewing machine in exactly the shape desired for the rubber coating. Two processes should be enough. A masticator that should prepare the raw material, a tubing machine attached to it that should force out the tubes for hose fabrics, strips of any width or thickness for belting and so on, a product that instantly solidifies when exposed to the air, that has no stretch, that does not absorb water, and that is about ten times as strong as cotton.

To ask or even to dream of such a product is to be thought visionary. Yet nature gives to the spider simple machinery that enables him to spew a tiny cable analagous to what we have described.

Does not the chemist's opportunity lie in an investigation of this substance and imitation of it?

RUBBER PLANTATION BARGAINS.

THOSE who are bargain seekers in the line of rubber plantations would do well to ponder over the fact that the whole of the Far East is alive to the value of its own possessions. Seven or eight years ago scores of rubber plantations in Ceylon and the Federated Malay States could have been bought at what today would mean a ridiculously low figure. Now they are held at figures that are almost prohibitive.

Not that there are no bargains in the tropical world for those who know what they want and recognize it when they see it. If, for example, six *Castilloas* will produce as much rubber as one *Hevea*, and further provided that the cost of collection is less, and the purchase price of mature trees infinitely less, it would appear as if there might be some bargains in the millions of trees growing in Mexico and Central America. Nor is it at all impossible that in some of the great plantings of *Manihot* in southern Brazil, particularly if it be the *Dichotoma*, there might be found exceedingly good bargains.

Hevea is also to be found planted in many other parts of the tropics besides Ceylon and Malayia—parts of the world that have not experienced the rubber craze, where capital is not easily interested, and where by the conservative it is still looked upon as an experiment—there, too, is bargain ground.

PAY A TRIFLE MORE.

A PROMINENT concern manufacturing typewriters thus writes us: "If you have compared rubber cylinders of today with the cylinders of twenty years ago, you will see the vast difference. The cylinders today are usually composition, called rubber by courtesy. Of course, this is due to the desire of all manufacturers to reduce the cost."

An honest confession of this sort is refreshing, that is if by "all manufacturers" the writer means all typewriter manufacturers. With a patented article costing, say, \$15 (this is only a guess) and selling at \$100, or over, they should be able to afford good rolls. Still the bigger the profits the greater the incentive to cut down costs and make a trifle more.

CAPITALIZING "COSTILLA ALBA."

AN ADVERTISER in New York's leading business paper needs \$1,000, so he affirms, for the incorporation of a \$5,000,000 company. He has four large plantations upon which are eight year old "*Costilla Alba*" trees, "giving \$50,000 a year, figuring now \$1.00 a pound." The only signature to the advertisement is R. 394, care of the newspaper office.

Here is mystery. Invoking Sherlock Holmes, the advertisement yields much. Thus, "You will observe, my dear Watson, that the advertisement leaves out important words such as "rubber" before "now"; hence it came as a cable. A further proof of this is in the word *Cos-*

tilla, which was undoubtedly written *Castilla*, the change of the a to o being a natural mistake in cabling. The sender of the cable resides in Colombia, as indicated by the *Alba*. He has been reading the writings of O. F. Cook, as proved by the *Castilla* instead of *Castilloa*. He is a cautious man, and money would be safe with him, as is evidenced by the care he takes of his own \$50,000, preferring to keep that and allow someone else to put up the \$1,000 for the incorporation.

CHICLE SUBSTITUTES FOR CHEWING GUM.

A MEXICAN correspondent predicts the failure of the chicle crop sometime in the not far distant future. That does not of necessity mean that the gum chewer is likely to cease out of the land. Already several plastics have appeared that could be used as substitutes. There are plenty of waxes, or resins, or gums, that alone or in combination may be adopted so that the chewing gum trusts can still continue in business.

TO MAKE RUBBER COLLECTION CHEAPER.

THE past month has been a hard one for rubber producers on the Amazon. Manáos is fairly easy as she sold rubber all the way down, quotations there often being 10 cents a pound less than in Pará. At the same time the stocks, more than 6,000 tons, valued at some \$15,000,000 upon which the Banco do Brasil has advanced large sums are still unsold, and the bank does not seem inclined to make further advances.

Passos Miranda, who will be remembered as one of the chief orators at the recent rubber congress in Manáos, has submitted to the Federal government a series of proposals similar to some that he suggested on that occasion. They embody river improvements on important branches of the Rio Negro, the large southern affluents of the Amazon, the Acre-Purús, hospitals in the interior, quarters for immigrants in Pará and Manáos, model breeding farms, etc. To do this a loan of \$30,000,000 is suggested to be raised by selling bonds that would net about 6 per cent. To pay the interest a tax of 400 R per Kilo (= about 6 cents per pound) would be added.

Such a project carried out would undoubtedly decrease the excessive cost of getting rubber to market, and if labor responded, reduce the cost of collection also. It is unfortunate that the burden of the work falls upon the purchaser of rubber, however, which is already over-taxed.

British Guiana and India-Rubber

By the Editor of "THE INDIA RUBBER WORLD."

SECOND LETTER.

Again the Climate.—A Boston Boy Planter.—The Bête Rouge.—Getting Acquainted with the Sapum Jenmani.—Jenman's Description of the Tree.—Sapum Plantations.—The Macwarriebaili.—Brittle Balata.—Balata back in 1883.—Notes on Balata Gathering.—Some Balata Statistics.

SPEAKING again of the climate of British Guiana, I want to affirm that of all the tropical countries I have visited it comes nearest to being my ideal. Not in Georgetown

nor on the coast.

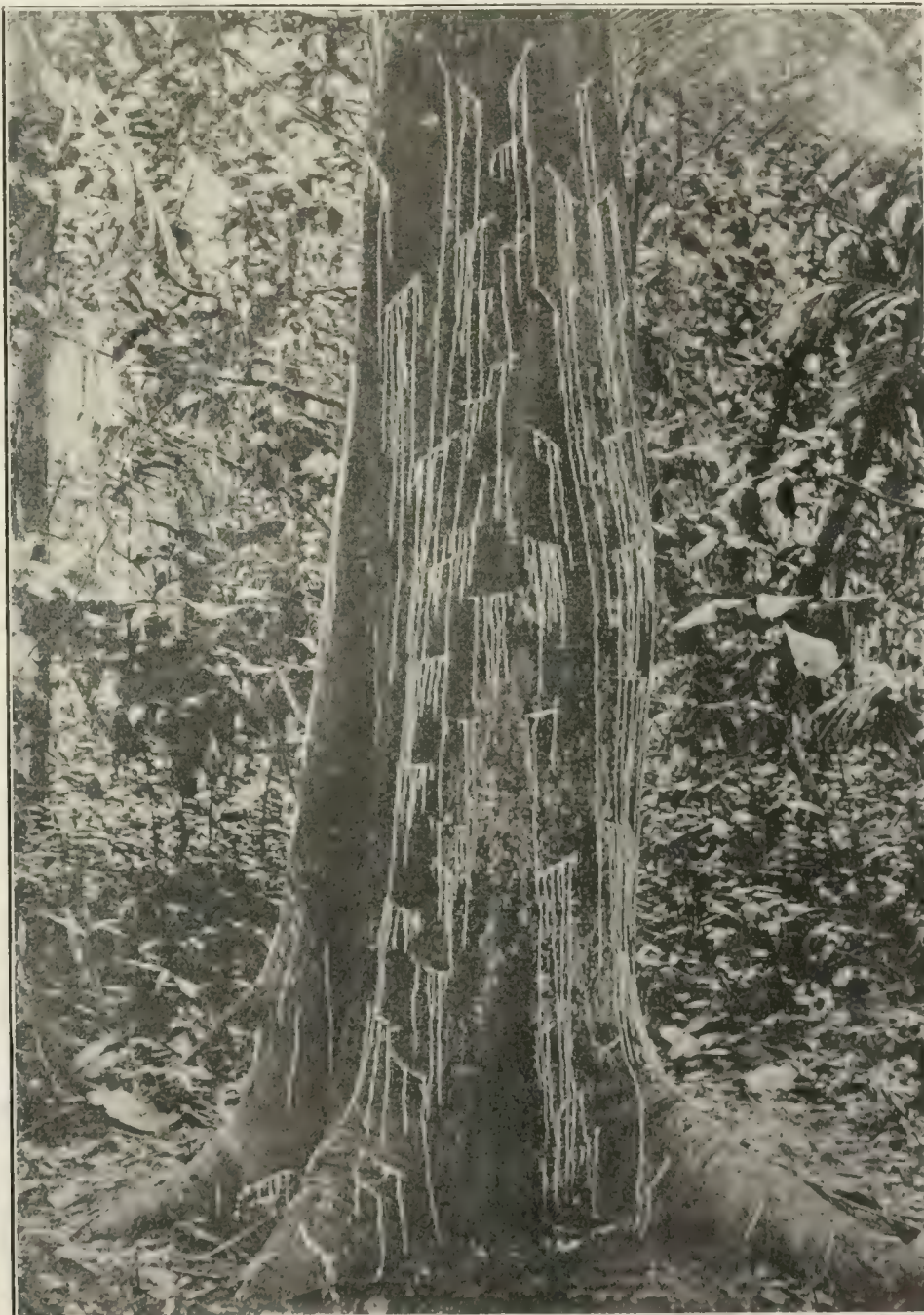
It is a trifle too sticky there, but healthy withal. But 40 or 50 miles inland it is just what one who loves tropical warmth in midday and cool nights would desire.

I met a young American in Georgetown on the occasion of my last visit who is well known to many in the rubber trade. He it was who once crossed the Andes and came down over the falls of the Madeira with a lot of rubber for the Safety Insulated Wire and Cable Co. He had become a resident of British Guiana, having purchased an island not far from Georgetown, and was engaged in planting *Hevea*. He was tapping wild *Sapiums* that he found on his land, shipping the rubber in and getting a very good price for it. His backers were a couple of rubber manufacturers in the United States, who, although, not big factors, were enterprising enough to wish to be sure of their own source of supply. The young American was living in a little cabin that he had

erected on the island and hiring a few men and for the amount of money that he had to spend doing a lot of work. His seed supply he secured in a very shrewd way. Most of the planters have to send to the Far East, and there are lots of "failures to germinate" in the seed. This youngster found in Trinidad a small estate with a few old *Heveas* on it. He induced a friend to buy it and the trees furnish all of the

seed he can comfortably take care of.

He was in excellent health with the exception of "hives," as he explained. Visitors to the Guianas and Brazil, if they stray outside of the cities, are apt to suffer from mild attacks of "hives." At least that is what they confide to some friend after a period of energetic and unavailing scratching. The fact is they have annexed a small red bug, the *bête rouge*, that burrows beneath the skin and is troublesome if not eliminated. Alcohol will do it, one or two applications being sufficient usually. As a preventive many soap their legs and come off scot free. And others, particularly those who are used to tropical pests, pay no attention at all to them. I collected some in all of the places that I visited, but it was in British Guiana that I got the liveliest



SAPUM JENMANI ON BAROON ISLAND.

specimens. They settle behind the knees and about the waist and are energetic at nightfall. I was out of alcohol and so I

used a liniment that one of the planters had in stock. It killed the parasites promptly, but it didn't stop there. It searched me through and through, penetrating, burning until it finally



WILD "SAPIUM" ON BOSTON RUBBER ESTATES.

exhausted itself, except for the smell it left behind. It was fine, one felt so warm and comfortable when the ache stopped. I was therefore able as an expert on tropical itches to diagnose



TAPPING "SAPIUM" WITH LADDER.



PROFESSOR J. B. HARRISON AT THE HEAD OF AN EXPLORING PARTY.

seems the most valuable. I had often wondered why Professor Harrison and the very alert and scholarly Assistant Director of Science and Agriculture, F. A. Stockdale, paid so much attention to it. Nor was I enlightened when I saw the specimen planted by Jenman in the Botanical Gardens. It looked so scraggly and sickly, and was such a pitiful object. But when I



"SAPIUM JENMANI" ON LOWER ESSEQUIBO.

my friends' ailment and prescribe a remedy, not the liniment, however.

Speaking of trees indigenous to British Guiana, that is, rubber trees, the *Sapium Jenmani*, called by the natives Touckpong,

saw a wild specimen, in soil adapted for it, a fine straight forest tree at least three feet in diameter, I began a revision of my prior prejudices. Then, too, it develops that it is one of those trees than can be tapped far up on the trunk, and the

latex coagulates on the tree forming a very high-grade scrap. The department had some of the rubber valued some three years ago and the price put upon it was \$1.06 per pound, when Pará rubber was quoted at \$1.07 and plantation at \$1.16. The Imperial Institute analyzed the samples and they contained 93.7 per cent. of rubber with a resin content of only 1.8 per cent. In 1909-10 the colony shipped 6,369 pounds of rubber, most of which was in scrap form and doubtless *Sapium* rubber. It was not all carefully collected, however, and it brought about \$3,250.

Jenman it was, who back in '83, first really brought the rubber to the attention of the world. He journeyed far into the forest, found the trees which at first he thought belonged to the *Ficus* family. What he wrote of it is most interesting. In part it is as follows:

"The trees were large individuals, four or five feet in diam-

turned black, but that in those recently made was nearly milk-white. The Indian boys, who are perhaps accustomed to play with the balls, as I noticed from several which they brought



GEOLOGICAL STATION, PURUNI RIVER.

me, never make them large, they strip the dry strings very dexterously from the bark, taking good care to extract the larger portion to which I have alluded as partly concealed in the incisions, and stretching it with a good deal of tension, wind it up. These balls have wonderful elasticity and bound with very little impulsion several feet off the ground. The rubber, too, seems exceedingly tenacious and strong. . . . This method of gathering is very economical of time, for it saves the tedious operation of catching the milk in a vessel as it issues from the wound, which is the most bothersome of all the operations. The principal objection to it is, that the rubber becomes soiled by the dirt adhering to the bark, a little of which it retains, and no doubt this would deteriorate its market value; but this deprecia-



TENT BOAT ON MAZARUNI



WALLABA FOREST.

eter of trunk, and 120 or more feet high. Their trunks were long, straight and unbranched for 60 or 70 feet from the ground. The lowest six feet of one had been scarred, and from the scars the milk had run and was dried in tears or strings several inches long on the bark. Most of the congealed rubber was, however, contained in the fissures made by the cutlass cuts, from which places it was rather hard to extract it because of the tenacity with which it held to the inner bark from which it had oozed. I gathered and made a ball, following the Indian plan of winding it up like twine, of what was on the trunk. They score the trunk and then leave it, the milk oozes from the wounds, trickles down the bark and coagulates and becomes dry in a few days. My guide said it took three days to dry, but I should have supposed a shorter time might accomplish the change, the little rivulets are so very thin. That which was in the old cuts—cuts probably a year or more old—had

tion might be reduced to a minimum by carefully brushing the surface down prior to commencing collecting operations. Rubber which has foreign matter incorporated with it is classed

under the term negrohead in the market, though its value depends on the measure of its freedom from dirt or other substance having regard, of course, to the quality of the rubber itself when clean. . . . I regard the discovery of this tree of great interest and probable importance, attaining, as it does, such a vast size, and producing a material of apparently excellent quality. The Indians know it under two names, the *Carabisi* calling it Touckpong and the *Arawacks* Cumakaballi. Noble in all its proportions, spreading and lifting its massive head above its neighbor's, it is one of the largest trees of the forest, and has a wide and general distribution over the deep belt of low country in the colony."

In 1905 considerable plantations of the *Sapium Jenmani* had been established in the northwest district of British Guiana and there is no reason why they should not be successful. As a rule, the planting of this species has been encouraged when the trees are found wild, and where they appear to thrive the best. The planters are also thus able to secure a good seed supply close at hand. Numbers of plantations are to be found in the county of Berbice, on the Demerara river, on the lower reaches of the Essequibo river. The government is also carrying on experiments in tapping on its forest reserve at the mouth of Bonasika creek that will soon tell the whole story of yield by a variety of methods. In addition to this at all of its experiment stations, in the northwest district, at Issororo, at Onderneeming, Christianberg and Pomeroon the government has been planting *Sapium*, and carefully tabulating every fact regarding its growth, etc.

Very little interest seems to be taken in *Castilloa* in the colony. A few plantations have scattering trees, and they are to be found in the Botanic Gardens, of course. But, as for any extensive planting or any likelihood of it, that is a vain hope.

The planters are not in favor of it and the government experts do not advise it.

Speaking again of that indefatigable traveler, the late G. S. Jenman, he believed that in the *Forsteronia gracilis*, which he found in abundance, he had discovered another valuable source of rubber. He was camping far up on the Demerara river at Malili, some 200 miles from Georgetown, when, in one of his forest excursions, he cut deep into a festoon of bush-rope and was surprised at the quantity of latex that gushed

or. He cut down forest giants to get at the whole vine, spent days in collecting latex and in trying to coagulate it, and finally sent rubber, flowers, leaves, etc., to Kew for identification and valuing. His report, which covers pages, is full of enthusiasm and interest. The Indians called the vine *Macwarrieballi*, and the botanists at Kew said it was the *Forsteronia gracilis*. The experts at Silvertown, to whom the rubber was submitted, said it was too sticky and soft to be valuable. That, however, was in 1888, when they would have turned down guayule, for example, and many other lesser rubbers, as indeed, would any rubber manufacturer of that period. Perhaps, therefore, it may yet appear on the market

Speaking of the lesser rubbers, and before beginning on balata,



TAPPING BALATA TREE.

of which the colony ships large quantities, I want to refer again to what is commonly known as brittle balata from the *Humiria floribunda*. If it is as abundant as some think and can be cheaply gathered, it should have a place. A British Guianian sent me a sample shortly after my first visit to the colony. He had an exaggerated idea of its value, however. The samples are before me as I write. They are plastic, brownish in color, and very dense, and show but little elasticity. They look very much like a low-grade gutta. I so wrote him, and his reply is certainly optimistic. I append it as it has a certain value.

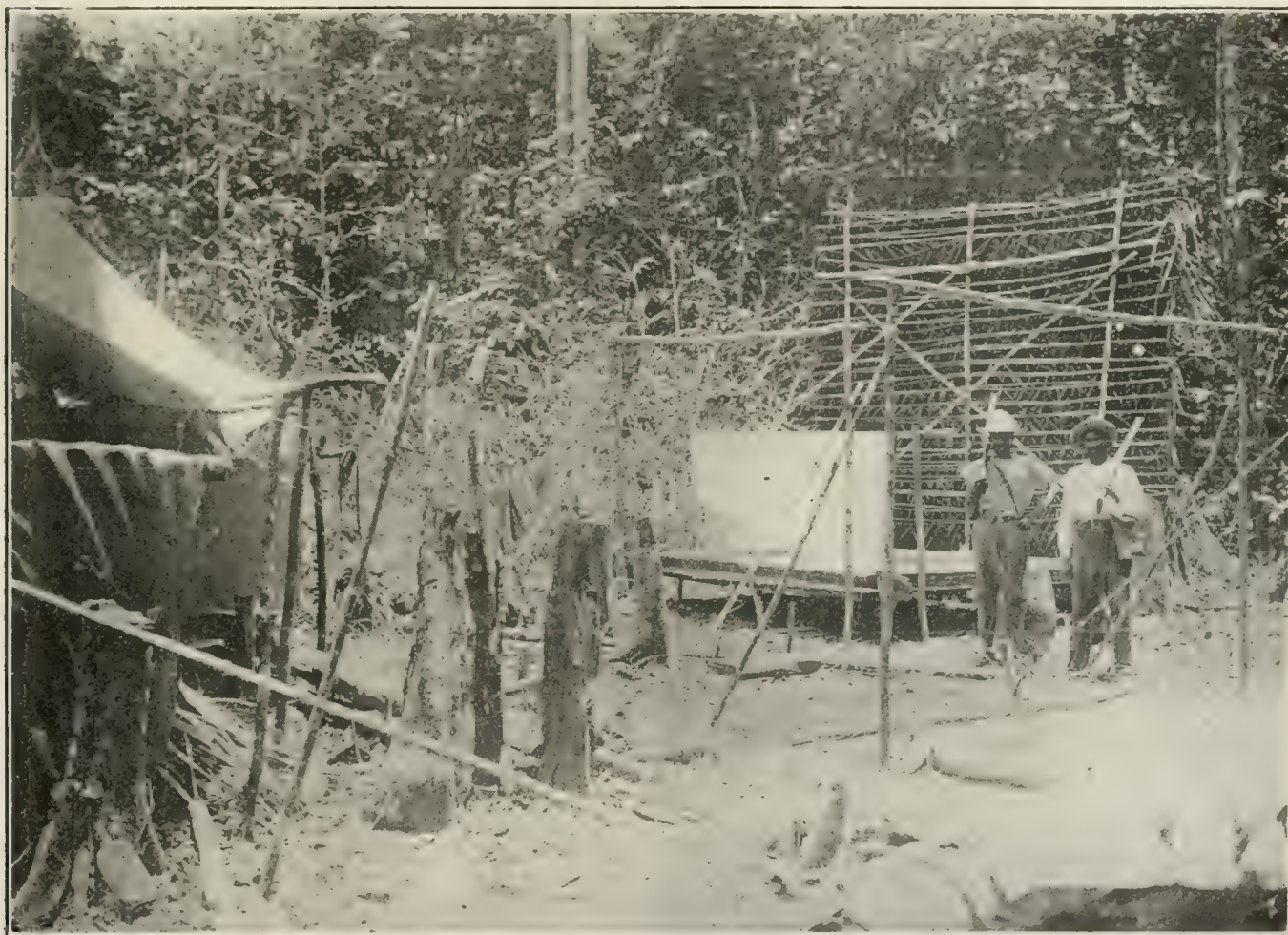
"Your letter of recent date received today, and I most certainly do not agree with your deductions. Brittle balata, or as it is sometimes called, bastard balata, is altogether different from the recognized balata of commerce. Brittle balata is, in my long and experienced opinion, a caoutchouc, whereas the balata of commerce is a gum. My samples are from the milk of latex of caoutchouc trees which grow in enormous numbers throughout the whole of tropical and subtropical America, hence the rubbers from them can be regularly shipped in enormous quantities.

"I send you five samples made from caoutchoucs collected from our forest trees by very experienced bleeders. These five samples are the same as sent to Europe and which have been well received, and have been valued at prices that will, I think, satisfactorily recoup us.

"Although the enclosed samples are small, they are quite large enough for any real expert or for any capable manufacturer to judge by.

"As soon as our new factory is started we hope to turn out a very large supply and later on we may have to establish branches in Trinidad, Brazil and Venezuela."

Back in '83 and again in '85 Jenman sent in a voluminous report concerning the "gutta" trees in the colony. It was characterized by the direct style that all of his communications show, and in spite of the fact that it was published as a dignified governmental utterance, is fascinating reading. He briefly sketches the Indians and the bush negroes, and an enthusiastic botanist, recognized and noted hundreds of tropical trees, vines and plants, as he journeyed into the forest in his search for the "bully" tree. Bits of tropical experience crop up, as for



TANK FOR COAGULATING BALATA.

"I believe we have an assured trade with both England and Germany and perhaps also with Denmark, so I cannot see how we should fail with America, as your letter so manifestly indicates.

"As before stated, these caoutchoucs can be easily obtained from trees that are enormously abundant, so that the rubbers from them should naturally be supplied at a lower price than the generality of such articles are. Therefore, we can ship to America if only the prices will allow us, and if only we can find trustworthy people to ship to, because it is we alone who are shipping, and it is we alone who are to be afterwards paid for articles that only the market requires, therefore, we wish to know the present approximate market demand, as well as the present approximate market price of the samples sent you

example, the presence on the Savannahs of *weree-weree* fly that just as soon as the perspiration starts swarm over the face and creep into the eyes. The engineers on the Madeira-Mamoré Railway know all about them, and it may comfort them to know that Jenman, 26 years ago, spoke of them only as a trifling annoyance, as he did also of the Cabowroo (known in Central America as the Rodador). His examination of the balata bark was very thorough, and so understandable that it is worth quoting verbatim.

"If a piece of partly dry bark be examined it presents (without going into the details of structure) three primary layers. The outer layer is dark brown, hard and dry; the next, which is usually much thicker, is rather spongy in tissue and lactiferous

and of a reddish raw beef color; the inner one is thin, more ligneous, a brown wood color and with fewer lactiferous vessels. The outer layer is subdivided into several very thin layers.

divisions of the cortical tissue (or at least they only become so eventually as the layers peel off) for where they occur the outer layer dips into the thick lactiferous layer and so preserves



SCENE ON THE ARRAWATTA BARIMA RIVER.



SCENE ON THE DEMERARA RIVER.

They are of two kinds, and differ much in the density of their cells. They alternate a dark brown and pale gray. In young trees there are few, but they increase with age. I have counted as many as twelve of each kind in the bark of a large tree. The second primary layer is that which yields the balata milk, though the inner, more ligneous layer is not devoid of it. These

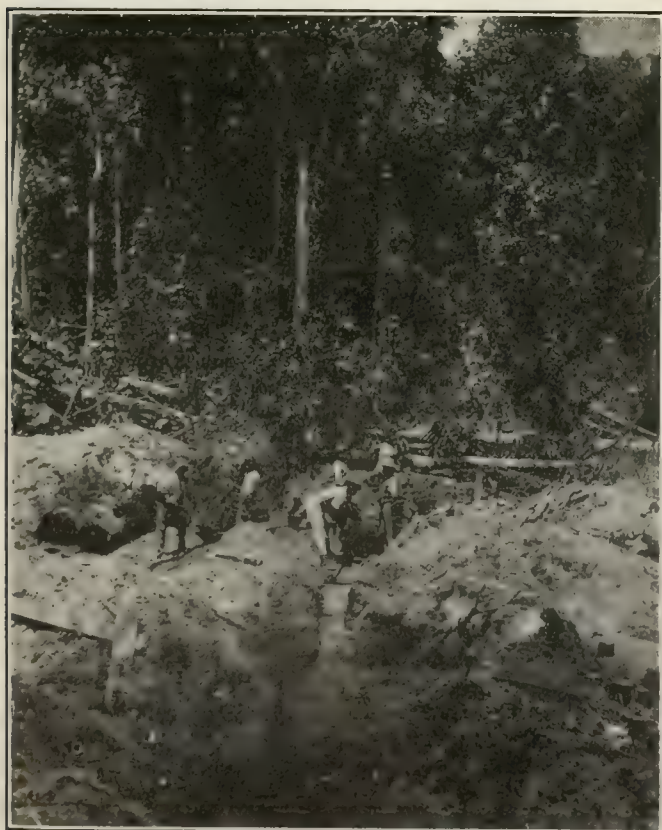
its continuity. The thin layers of the external primary layer crack transversely in pieces an inch or two long, and by lateral contraction eventually scale off."

He had received a long letter from Sir Everard im Thurn, who had penetrated to many remote places in the colony, in which it was stated that many of the balata gatherers cut the trees down to extract the milk. Jenman, as a servant of the government, was anxious to protect the property of the crown and hunted industriously for such violators of the laws, but apparently found none. The use of the wood of the tree for sugar rolls in the West Indian islands and for arms and shafts for windmills in the Guianas is also noted by him. The trees were found to vary considerably in the amount of milk they gave. The collector would make a single cut in a tree, watch the flow for a few minutes and if it was not satisfactory go at once to another tree, claiming that it was a "male" tree and no good. As an adulterant the collectors then and now often add the latex of the *Sapium Jenmani*, if it happens to be plentiful in the vicinity of their camps. The methods of tapping, coagulating and handling are exactly the same as those already described in the story of balata in Dutch Guiana [see THE INDIA RUBBER WORLD, March 1, 1911.]

According to Professor Harrison and Mr. Stockdale, British Guiana sent out its first balata in 1859, but rubber manufacturers would have none of it. In 1862, however, another effort brought it to the favorable attention of several British manufacturers, and a market was created. Three years later 20,000 pounds were exported. Then the demand fell off for about ten years, when it revived. During 1908-9 1,090,405 pounds were produced, valued at nearly one-half a million dollars. 1910-11 will probably see an increase both in product and value. By the way, as a lesson in modest taxation on exports, balata is taxed two cents a pound, and that in spite of its nearness to northern Brazil. The price of balata has varied exceedingly. In '83 some parcels of it sold as low as 12 cents a pound, and for years it brought only 30 to 35 cents. Jenman adds that a company in Boston, Massachusetts, offered in '83 to pay 50 cents a pound for it, if they could be assured a large and constant supply.

The British Guiana statistics on balata are very informing, and surprisingly complete. Among other things they note that in 1904-5 the United States took but 9 per cent. of the balata crop; in 1908-9, however, it took 25 per cent.

[TO BE CONTINUED.]



BRITISH GUIANA GOLD MINING.

two layers are homogeneous and adherent to the wood until it is dry. The longitudinal fissures, which I have mentioned as a prominent external characteristic of the bark, are not absolute

The India-Rubber Trade in Great Britain.

By Our Regular Correspondent.

THE quality of a large consignment of these goods was the main issue in an action at the Manchester May assizes, a good deal of technical evidence being tendered. Briefly stated, the action was brought by Redfern's Rubber Works, second, of Hyde near Manchester, against George Blake, a London

BLACK HEEL PADS.

rubber merchant, to recover a small balance of account owing and also damages for libel in respect of strong language used in writing about the quality of the heels, all of those shipped abroad having been rejected. The case lasted two full days, the judge's summing up taking more than an hour. In the end, the special jury found for the plaintiff on the claim and for the defendant on the libel, honors thus being easy and costs divided. I shall not attempt in the space available to follow the evidence, but a few remarks on certain points will be of interest. As is not unusual in these cases the experts called to testify to the quality of the rubber differed in their conclusions. J. E. Baxter and J. W. O. Walker, for the plaintiff, saw nothing wrong with the heels, considering their low price, though each of them spoke as to the difficulties connected with making a satisfactory black heel. For the defendant, Mr. Wild, manager of the Wood-Milne Works; Mr. Porter, manager of the Harboro Rubber Company, and Mr. Mallaby, of the Haycliffe Rubber Company, condemned the heels as unmerchantable and testified to having made quite satisfactory goods at the same price. A good deal of evidence was given as to the natural life of such cheap heels and both sides were in general agreement that no more than six months' guarantee for keeping in stock could be given and that a life of four to six weeks on the heel was all that could be expected. When Mr. Porter was shown one of his cheap heels in perfect condition, after four years in a stock room and counsel suggested that it was a freak, he replied amid laughter that it was a tribute to the general excellence of the Harboro Company's manufacture, and he went on to explain that though for commercial reasons they only gave a six months' guarantee they certainly did not expect the heels to begin to deteriorate at the end of that period. The analysts who gave evidence in court were William Thomson, F. I. C., for the plaintiff, and H. L. Terry, F. I. C., for the defendant.

Mr. Thomson, when questioned as to the quality, said he had nothing to say on the point, while Mr. Terry in reply to a similar query, said it consisted largely of reclaimed and crumb rubber of low quality, as reported in his analysis, though in cross-examination he said that he had not attempted to give separate figures for new and old rubber as this was impossible.

With regard to the composition of the heels which the judge said should be called "the formula" not "the mixing," a rather interesting situation arose. When the plaintiff was on the witness stand his own counsel asked him to give the composition of the heels; this he proceeded to do in full, and the interesting details found their way into an evening paper. As the cross-examining counsel wished for further details from a book not in court, it was arranged that the book should be fetched by motor car from the works. The luncheon interval then took place and on resumption the plaintiff took up a different position and appealed to the judge that the contents of the book, which had now arrived, should not be given in open court, as being concerned with trade secrets. The judge at once agreed to this, saying he would not have permitted the former evidence if the plaintiff had objected at the time. After some discussion it was agreed that the defendant's counsel might look at the book on

giving an undertaking that they would not make any use of its contents, not that anybody in court thought that the two K. C.'s concerned were at all likely to introduce further competition into the heel trade by way of augmenting their incomes. It was rather unfortunate, the judge remarked, that neither party could produce the original samples on which the order was said to have been placed, as it would have enabled the question of quality to have been elucidated. With regard to the plaintiff's contention that a rubber merchant such as the defendant should be able to judge whether deliveries are up to sample or not, the judge said that it was not obligatory on the defendant to recognize any defects which were not at once perceptible to the senses. There was no obligation on a purchaser to employ analysis or probe for possible defects; the law said that the manufacturer was responsible for any defects not at once discernible.

THE remarks in THE INDIA RUBBER WORLD of May 1st, in Reclaiming Litigation in Great Britain, are of more than passing interest,

REFORMING LITIGATION.

as they embody what is, of course, an authoritative statement from The Simplex Rubber Company, second, that they are not likely to be engaged in any litigation, for the present at all events. The writer of the article uses the terms "reclaiming" and "reforming" as if they were synonymous. Rightly or wrongly, however, they have quite a distinct significance in England. Rubber reclaiming has long been carried on by numerous firms in England, the article produced being sold in the mass by the cwt. or ton to rubber manufacturers. On the other hand, rubber reforming, or remaking, as it is also called, is carried on by firms who take a customer's old rubber article, grind it up, remould it, and sell it back to him. This, at least, is the business which was carried on by Gare at his works at Hazel Grove, solid cab tires and buffers being the goods chiefly concerned. Since competition arose in the reforming market, the business seems to have developed in the direction of general mechanical rubber manufacturing, and only those who are in the secrets of the different factories know whether the goods turned out can strictly be called reformed or whether they are not, in reality, identical with the ordinary rubber works product, consisting largely of reclaimed rubber. As mentioned in the article, the opposition to Gare's patent (now the property of the Simplex Company) was not successful, nor, I may add, was Gare's opposition to the patent of Hyatt and Lenn. The original patents of Karavodigne and Roux are now being worked by the Mill-wall Rubber Company, second, at Harpenden, whose advertisements have warned purchasers against goods which infringe their patent. Among other "reformers" the Premier Company is the most important in point of capitalization, work being carried on under Unmisch's patent. The most recent flotation connected with reforming is the Letchworth Rubber Company, second, registered on May 19 with a capital of £4,000, to acquire a license to work the Gare process.

CHARLES BLAIR, late works manager of the Mersey Reclaiming Company, second, of Stockport, is now engaged in developing a reclaiming process which he has patented. He has had a good deal of

SHORT MENTION.

experience in this line, having been engaged in it many years before going to the Mersey company. Like others concerned in reclaiming, he would like to see British rubber manufacturers use a larger proportion of reclaimed rubber with their new rubber. I don't know how he arrives at his figures, but he says that the British use about 3 per cent. of

reclaimed rubber in general goods, against 30 per cent used in America.

This is made in Great Britain by only two firms, the Northern Flexible Metallic Tubing Company, of Bradford, Yorkshire, and the Flexible Metallic Tube Company, of Ponders End, London. These firms are large purchasers of strip rubber, which

FLEXIBLE METALLIC TUBING.

is used to make the tubing air-tight. It is about 14 years since this business commenced, considerable difficulty being experienced at the outset with the galvanizing of the metal. The demand for this tubing has shown continuous expansion in recent years.

Mr. R. W. Eccles, who has been for some time manager of the New Liverpool Rubber Company, second, has gone to Messrs. F. Reddaway & Company, second, Manchester, as general commercial manager. Mr. Eccles was formerly manager at the Castle Rubber Company, second, Warrington. The New Liverpool Rubber Company has been already referred to in these notes as the original Liverpool Rubber Company taken over by Messrs. Chas. Macintosh & Company, second.

The recent death at a comparatively early age of Mr. James Iddon, of the well-known Leyland firm of rubber machinists, will be generally regretted in the trade, both from a personal and business standpoint. From small beginnings, Mr. Iddon had, by his ingenuity and close study of the requirements of the rubber trade, raised his firm to the high position it now occupies, both in home and foreign estimation. Before commencing business at the Brookfield Ironworks, Leyland, in 1887, he had long held the post of engineer at the works of the Leyland Rubber Company. Of the various developments in rubber machinery, of which he was the pioneer, it is perhaps with the largely extended use of the hydraulic vulcanizing press that his name has been most intimately associated.

A well-known waterproofer of the Manchester district has passed away in the person of G. E. Ferguson, of the firm of Ferguson, Shiers & Co., whose mill is at Failsworth. This business was started in 1894, both partners having been connected with the Heywood proofing firm of Z. Mistovski & Company, now for many years defunct.

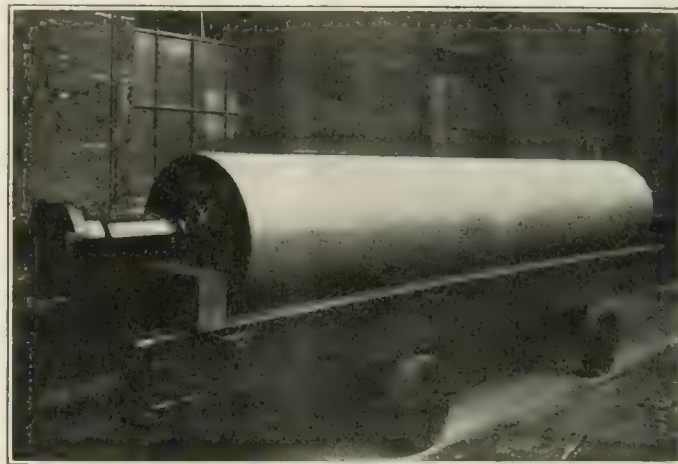
Slazenjer & Co., the well-known sporting outfitters of London, has been floated as a public limited company, with a capital of £265,000 [= \$1,289,622]. An important part of the business is the sale of lawn tennis balls, Slazenjer's make having been adopted by the Lawn Tennis Association as the standard ball for tournaments about ten years ago, Ayres balls having previously held this position. The firm are large buyers of uncovered balls from the rubber manufacturers and finish them off in their own factory, at least this is what is generally understood. As regards the game, there is no sign of any diminution in its popularity, the number of tournaments having greatly increased in recent years. This is not only in England, but to a lesser degree, all over Europe, so that it is a safe supposition that the income of the new company will show increased profits in its lawn tennis department. Of course, Slazenjer's have no monopoly, except as regards tournaments, as there are various other makes of balls, some at a considerably less price, which fill the requirements of a section of the community.

THE "CASTILLOA" TROPHY.

Among the trophies to be offered at the coming rubber exhibition, all of which were "at home" to the press and those interested in the show, it is unanimously agreed that the \$1,000 trophy of THE INDIA RUBBER WORLD of New York deserved the praise and admiration that it received. Already of commanding proportions, and most elegantly and suitably designed, it was placed on a double plinth in the center of the other cups, above which it towered, a real work of art in bright and oxydized silver.—[*Tropical Life*, May, 1911.]

GIANT RUBBER COVERED ROLLS.

THE North British Rubber Co., Limited (Castle Mills, Edinburgh), recently covered some rolls for Charles Walmsley & Co., Limited, paper makers' engineers, Bury, which they believe are the largest rubber-covered rolls ever used in Great Britain. Several rolls were rubber covered, and from the photograph



GIANT RUBBER COVERED ROLL.

some idea of the size may be gathered. The rolls were 30 inches in diameter, and 225 inches over all, and weighed over six tons each. Walmsley & Co., constructed the machines in which they are to be used to make paper at 650 feet per minute, for Edward Lloyd, Limited, Sittingbourne.

INDIA-RUBBER GOODS IN COMMERCE.

EXPORTS FROM THE UNITED STATES.

OFFICIAL statement of values of exports of manufacturers of india-rubber and gutta-percha for the month of April, 1911, and the first ten months of five fiscal years, beginning July 1:

MONTHS.	Belting, Packing and Hose.	Boots and Shoes.	All Other Rubber.	TOTAL.
April, 1911	\$230,708	\$92,305	\$722,751	\$1,045,764
July-March	1,511,975	1,801,977	4,475,544	7,789,496
Total, 1910-11.....	\$1,742,683	\$1,894,282	\$5,198,295	\$8,835,260
Total, 1909-10.....	1,580,088	1,593,696	4,082,427	7,256,211
Total, 1908-09.....	1,225,882	1,139,271	3,165,096	5,530,249
Total, 1907-08.....	1,141,634	1,365,616	3,122,544	5,629,794
Total, 1906-07.....	1,040,560	1,007,935	3,015,892	5,064,387

THE above heading "All Other Rubber," for the last ten months, includes the following details relating to Tires:

MONTHS.	For Automobiles.	All Other.	TOTAL.
April, 1911	values \$202,233	\$67,412	\$269,645
July-March	1,325,903	411,801	1,737,704
Total, 1910-1911	\$1,528,136	\$479,213	\$2,007,349

BRIEF MENTION.

A SPECIMEN of *Castilloa elastica* rubber, in crepe form and of very excellent quality, reaches THE INDIA RUBBER WORLD from Messrs. David Bridge & Co., Limited, the rubber machinery engineers of Manchester, England, who describe it as having been coagulated under the Da Costa system. [See I. R. W., January 1, 1911, page 129.] The rubber referred to was produced in Vera Cruz, Mexico, on the property of El Palmar Rubber Estates, Limited. [See I. R. W., May 1, 1910, page 283.]

The Manufacture of Insulated Wire—II

By a Practical Man.

STRIP MACHINE INSULATION.

THE application of rubber for insulation by this method differs materially from the one just described. The rubber in its preparation goes through precisely the same process. But instead of passing from the mixing mills to the insulating machine, it first goes to the calender. Here it is sheeted to specified thicknesses and wound between sheeting upon mandrels. These sheets are afterward cut into strips by a machine devised for that purpose, and automatically wound, or wound by hand, upon bobbins or reels for use in the strip machine. An advantage in this method is found in that the insulation material can be used hot or cold. Cut into strips it can be held at the convenience of the operator. A disadvantage develops in the necessity for splicing strips (their length depending on the size of the roll produced from the calender); during which the machine for applying this form of insulation must of necessity stand idle. Another advantage is seen in less time being required in preparation of insulation material. Rubber, for example, can be used with less care in its washing, and the compound stocks are not passed through a refiner.

A machine for the application of rubber strip to wire is in marked contrast to a spewing machine. Its body resembles that of an ordinary machine shop lathe; is of iron and stands about hip high. These stands are equipped with one or more frames for holding grooved wheels. The grooves in these wheels correspond to the size of insulation it is desired to apply, consequently there are many such wheels. If, for example, a heavy coat of insulation material is to be applied, experience may dictate that the proper thickness can be secured by use of five strips. This would mean the use of five sets of two wheels each, the groove in each set nicely graduated to match the growing diameter as each strip is added. To illustrate: The wire or cable is uncoiled from the holding reel and one end passed through the first set of wheels. Above and below these wheels are bobbins holding the supply of strip insulation. Strips from these bobbins have been passed through a guide, and coming in contact with the cable are enfolded upon it in such a manner as to leave a seam on one side. Passing immediately between the grooved wheels their pressure closes the seam and trims away the surplus insulation material, leaving, however, a bead. This shows the wire with the first layer applied, and it passes swiftly through the length of the machine, receiving from each set of bobbins successive plies of material. As most cables, small as well as large, call for a layer of rubber coated tape, it is wrapped upon it as it leaves this machine, and is then wound on the receiving drum. The value peculiar to this method is now evident: Insulation material, in preparation of which no especial pains has been taken to free it from foreign substances, is applied to a wire or cable in successive layers. These layers calendered to an exact thickness, and applied as shown, must, of mechanical necessity, hold the cable in center, and the chances are worth taking that each layer of insulation material will close most, if not all, defects in the layer immediately preceding. A cable of this sort can be produced at the rate of 15,000 feet per day, and six to eight men are required to handle the machine. For the production of lighter insulation, smaller machines are used, and a single workman can handle a job calling for one or two layers. These machines are used in conjunction with the spewing machine, where the latter applies a seamless "core," and the other one or more layers of strip. While for single wire and small strands less men are required in the strip method than for the

seamless, they are handicapped by the necessity for stopping when bobbins are empty, while a spewing machine may be operated continuously.

The ten-strand machine is one that covers ten 14 B & S, or other size wires at one operation with two layers: a core of red or white, and a cover of black. A spewing machine is used for the core material. The machine head is bored for ten wires which pass thence to the "stripper." Two bobbins, one above and the other below, apply to each side of the strands a broad strip of black insulation material, which, in contact with the wires, passes between grooved wheels which compress the stock about each wire, although not completely covering them. These ten strands in form of a wide band are wrapped about steel drums holding from 10,000 to 15,000 feet each. Such a machine, properly handled, should produce 200,000 feet per day.

Vulcanizing of insulation applied in this manner differs in no essential particular from that employed for seamless. Open steam vulcanizers of various sizes are used. The drums or pans are placed upon a truck that slides into the curing chamber and remains there during the process. Once vulcanized the insulated wire or cable is transferred to reels of convenient size for the next operation—usually that of braiding, to pass therefrom through the various successive steps of the process—waxing, finishing, testing, to the stock or shipping rooms.

As noted above, 14 B & S is produced ten strands at one operation. After vulcanization these strands are split apart on a machine that coils the ten strands upon ten small reels, and ready for the braiding machines.

The testing department of an insulated wire factory is its most interesting and important division. It occupies the position of inspector and final judge of all the work of all the processes. It is the repository of those heartless things the "specifications," and there must be decided the fine points of fitness. Doubtless the fact that insulation must conform to certain rigid exactions, has a lot to do with the careful supervision demanded of all branches of the manufacture of insulation. After the expenditure of time and money in carrying, say, a 19-conductor cable, through the elaborate steps of its production in lengths of 5,280 feet each, to have it "break down" in the electrical testing, is humiliating not to say demoralizing; time is lost, profits disappear. There are several factors that contribute to such a result:

1. Lack of care (proper apparatus) in preparing rubber and compounding ingredients.
2. Careless workmanship, and inexpert handling of the wire covered by unvulcanized insulation material.
3. Sacrifice of quality to the demands for "greater production."

In short, it is susceptible of easy demonstration that intelligent care distributed through all steps of every process in the manufacture of insulated wire, pays.

A diagram or profile of these two methods can be shown thus, indicating steps in process and apparatus:

Spewing Machine:

1. Coil of wire or cable to be covered on reel stand, to
2. Spewing machine (production 10 hours, 75,000 feet.)
3. Hot closet for insulation stock.
4. Narrow table and soapstone box.
5. Receiving drum or pan.
6. Taping machine.
7. Vulcanizer.

8. Reeling from drum or pan to reels for braiding.
9. Braiding and twisting.
10. Saturating and finishing.
11. Lead covering or armoring.
12. Electrical testing.

Strip Machine (10 strand):

1. Wire in frame holding 10 coils.
2. Spewing machine for applying core.
3. Strand strip machine. (Production 10 hours, 200,000 feet.)
4. Receiving drum.

Strip Machine (single wire or stranded conductor):

1. Coil of wire on reel stand, to
2. Strip machine (production 10 hours 15,000 feet.)
3. Taper, to
4. Receiving drum, to
5. Vulcanizer, to
6. Reeling off and distributing.
7. Braiding and twisting.
8. Saturating and finishing.
9. Lead covering or armoring.
10. Electrical testing.

SOME THOUGHTS CONCERNING CONVEYOR BELTS.

BY JOHN J. RIDGEWAY.

MY attention was first drawn to belt conveyors some twenty years since, and the idea appealed to me, especially when contrasted with what was then in use, the common type of scraping conveyors with flights, either chain, knuckle jointed or wire connected, working in metal troughs and carrying material in bulk or packages. Without any particular claim to a musical ear, I could not help but hear some of the Wagnerian music played by these appliances, and it seemed a fair inference that anything so ear-piercing and rest-disturbing could not be produced by machinery unless at a fearful cost of wear and tear. The silent efficiency of the belt conveyor, the proof in bicycle and auto tires of the ability of caoutchouc to withstand abrasion under conditions far more exacting than ever obtain in belt conveying, the quantity possible to be conveyed, the extremely small power needed, the flexibility of delivery, the low operating and maintenance cost convinced me then that the belt conveyor would be the most efficient aid to economy in the transportation of material in bulk or package, within the possibilities of its utilization. That is where items like quality have not been sacrificed in order to obtain a low price, driving pulleys minimized, in order to get traction, and the belt depreciated in quality until it gives too high a maintenance cost.

The belt *per se*, leaving out the question of quality for the moment, has certain items of cost inherent in it—factory cost, advertising and selling, freight, transportation and cartage, from which items the consumer receives no benefit whatever. The fabric is the only item from which the consumer receives any direct benefit in a poor quality belt. To illustrate: dig foundation for a house, build sub and superstructure and get as far as the roof. The man who would roof with tissue paper instead of tar paper would be considered woefully deficient in ordinary common sense, and yet that is what some have done in conveyor belts. The purchaser ignorant and anxious for low price and in his ignorance listens to arguments of "just as good" and won't be moved by intelligent argument and proof. The salesman fearing loss of contract and thoughtless of the ultimate result, makes the quality to conform, to his own detriment and that of the user. They indulge in mutual recrimination, whereas, they should stop and show a disposition to coolly consider the proposition, mutually bear the onus, shake hands and reform.

In an article like a rubber belt, where the man who made it

can't identify its quality after it has left the vulcanizing press—how necessary it is that care should be exercised to do business only with those who have firmly imbedded in their minds the absolutely necessary maintenance of quality.

The engineer in charge of the construction of new plants or the renovation of old ones leaves a space for the installation of a belt conveyor so circumscribed as to occasion unavoidable wear and tear and the purveyor to suit his customer concedes what he knows is wrong, to the detriment of both.

For instance, one often sees the leads or noses of feeding chutes extended four or five feet parallel with the belt, causing any material that was falling through the chute, when it should spread, to be ground the full length of these leads. The result is the wearing of the belt with absolutely no justification when the remedy is simple, namely, to set the chutes at an angle to the travel of the belt so that any material falling through would constantly free itself.

Those who have belt conveyors in charge are often thoughtless of the risks they run when they permit a workman, in clearing the transfer chutes, to use a shovel or hoe. This is often dropped, and before anything can be done, hundreds of dollars worth of damage occasioned. A remedy for this is equally simple. The instrument used to clean transfer chutes ought to be attached by chain or otherwise, so that by no possibility could it drop through.

Conveyor belts are often left fully loaded and without the necessary motor control are started up at full speed, a condition absolutely unjustifiable and yet one that often occurs.

The troughing idlers are often constructed more for the immediate convenience of their individual manipulation than with the thoughtful consideration of the wear and tear of the belt which first, last and always being the large item, ought to be considered. Pulleys in line, when driven, have a tendency to act like a pair of shears, and this is continuous and intensified when the loads are heavier than they ought to be or the carriers are spaced too wide apart, and this also is a fruitful source of destruction to the belt.

As a rule, in belt conveyors of any appreciable length, the belt represents at least two-thirds of the initial cost of installation, and it would hardly seem the part of wisdom to prejudice two-thirds which is subject to constant wear, for a saving in one-third which, in the nature of the material and the character of the work that it performs, should last almost indefinitely.

The criterion of merit in an article for commercial uses is that it should represent, in service or efficiency, the greatest possible return for the amount of money expended and right here comes in this everlasting question of last cost. The writer knows of cases where conveyor belts have cost \$12 per foot, in contrast with others that have cost \$1.75 per foot, operating for the same time under almost identical conditions and handling the same type material. In the first case the sharp pencil was used with telling effect, and in the second case a more far-seeing judgment was exercised.

It is impossible in a short article of this kind to go into this subject much more fully, but if enough has been made clear to occasion a little more thought to the essential requirements of intelligent purchase of this type of machinery, the writer will consider himself amply repaid.

THE UNITED STATES CONSUL at Sandakan, Borneo, reports 40,000 acres under cultivation to rubber in British North Borneo, in 1910. On the various plantations some 15,000 coolies are employed, and the number will have to be increased to 50,000 as soon as the trees become productive. Large plants have been established at Sarawak and other points to handle the crude gums—gutta-percha, gutta-jelutong, gutta-jangkar and caoutchouc—which are being purchased in increasing quantities from the natives.

Recent Patents Relating to Rubber.

UNITED STATES OF AMERICA.

ISSUED MAY 2, 1911.

- N**O. 990,838. Tire pump. B. G. Coe, assignor to The Coe Stapley Manufacturing Co., both of Bridgeport, Conn.
 990,848. Tire. James B. Crawford and James R. Milliken—both of Sioux City, Iowa.
 990,956. Vehicle wheel tire. M. Clark, Chicago, Ill.
 990,956. Pneumatic tire. P. E. Doolittle, Toronto, Ontario, Canada. Assignor to Doolittle Rim Co., Ltd.
 991,003. Tire protector. H. A. Mielke, Raymond, Minn.
 991,010. Tire pump. J. W. Nesbitt, Riverside, Cal.
 991,013. Grip tread for vehicle tires. C. J. Ohlson, N. Y.
 991,127. Tapping knife for rubber trees. P. L. Barrenquy, El Salto de Agua, Mexico.
 991,256. Repair sheet. T. Wilde, Bellingham, Wash.
 991,271. Insulating board. S. Cabot, Canton, Mass.
 991,286. Antiskid chain for automobile tires. O. Falkenwalde, assignor to the Snap-On Tire Chain Co.—both of Baltimore, Md.
 991,328. Quick detachable wheel tire. L. H. Lamkin, Natchez, Miss.
 991,374. Hose coupling. W. J. Rolle, Oilfields, Cal.
 991,458. Tire shoe building apparatus. R. Rowley, New York, and J. J. Coomber, Jersey City, N. J.

Trade Marks.

- 48,895. Greenwood Manufacturing & Supply Co., Boston, Mass. The word *Sun*. For shredded metallic packing.
 52,582. Lewis & Tylor, Ltd., Cardiff, Wales. The word *Gripoly*. For woven machine belting, etc.
 54,647. W. L. Barrell, Lawrence, Mass. The word *Plutol*. For belting, etc.
 54,813. The Electric Cable Co., Bridgeport, Conn. The word *Engineer*. For rubber covered insulated wires and cables.

ISSUED MAY 9, 1911.

- 991,563. Tire. D. C. Thomas, Bronwydd, Llanishen, England.
 991,612. Cushioned tire for automobile wheels. S. Gordon, Washington, D. C.
 991,657. Siphon. S. Sekine, Chicago, Ill.
 991,737. Automobile tire. S. J. Moore, assignor of $\frac{1}{2}$ to T. Koop and O. J. Boesel. New Bremen, Ohio.
 991,744. Sectional vehicle tire. A. H. Peloubet, Newark, N. J.
 991,769. Hose clamp. A. G. Catelain, Chicago, Ill.
 991,798. Tooth brush. J. Orthwein, assignor of $\frac{1}{2}$ to F. Haas both of Suffern, N. Y.
 991,831. Ankle support and protector. H. J. Collis, Taunton, Mass.
 991,894. Tire shoe. R. Rowley, New York, and J. J. Coomber, Jersey City, N. J.
 991,895. Antiskid attachment for wheel tires. C. E. Russell and T. M. Keith, Brooklyn, N. Y.
 991,949. Tire valve. Fred B. Carlisle, Malden, Mass., assignor to Standard Auto Valve Co., Boston, Mass.
 992,050. Hose coupling. H. W. Peterson, Seattle, Wash.
 992,052. Vehicle tire. M. A. Phillips, Montreal, Quebec, Canada.

Trade Marks.

- 52,513. McGraw Tire and Rubber Co., East Palestine, Ohio. The word *Imperial*. For rubber automobile tires.
 55,202. E. Faber, New York. Representation of an armorial shield. For rubber erasers, rubber bands, etc.

ISSUED MAY 16, 1911.

- 992,177. Rubber tire. P. Ernenwein, New York.
 992,239. Stud for tire covers. A. Noel, Paris, France.
 992,259. Horn and other articles constructed from flexible tubing. E. Rubes, assignor of $\frac{1}{2}$ to L. Rubes—both of Brooklyn, N. Y.
 992,314. Hose nozzle. F. Wheatley, Kansas City, Mo.
 992,515. Boot or shoe. J. J. Mulconroy and E. S. Morris, Philadelphia, Pa.
 992,603. Elastic tire. F. Schiller, Prague, Austria-Hungary.
 992,604. Tire. J. P. Schmand, Roselle Park, N. J.
 992,680. Hose coupling. C. F. W. Lasch, Louisville, Ky.
 992,719. Spring wheel. G. Leeper, Visalia, Cal.
 992,721. Bottle filling apparatus. Thomas J. Levey, Washington, D. C., assignor to the International Cap and Sealing Machine Co., Highlandtown, Md.

ISSUED MAY 23, 1911.

- 992,796. Armored tire. G. D. Moore and R. L. Morgan, Worcester, Mass.
 992,904. Filler for tires. F. T. Roberts, New York.
 993,028. Vehicle wheel and tire. M. Clark, Chicago, Ill.
 993,054. Process for filling hollow tires. W. H. Goodfellow, Detroit, Mich.
 993,088. Vehicle wheel. J. G. McAlpine, Gilroy, Cal.
 993,212. Overshoe retainer. W. G. Wheeler, Cincinnati, Ohio.
 993,222. Tire tread. N. J. Busby, Boston, Mass.
 993,306. Resilient tire. I. G. A. Kitchen, Scotforth, Lancaster, England.

ISSUED MAY 30, 1911.

- 993,336. Construction of warning horns. F. Berton, Paris, France.
 993,444. Hose band. G. Ferguson, Los Angeles, Cal.
 993,498. Hose nozzle and sprinkler. J. H. Bolitho, Boone, Iowa.
 993,632. Tire case. B. A. Alperin, New York, assignor to L. B. Gleason, Delhi, N. Y.
 993,803. Elastic webbing. W. G. Smith, assignor to The Russell Manufacturing Co.—both of Middletown, Conn.
 993,858. Spring wheel. F. T. Maurer, Kansas City, Mo.
 993,957. Vehicle wheel tire. M. B. Carmody, Columbus, Ohio.
 994,005. Nozzle holder for garden hose. T. N. Jones, Boulder, Colo., assignor of $\frac{1}{2}$ to J. H. Hall, Belvidere, Neb.
 994,025. Hose reel. B. H. Montgomery, Toronto, Ontario, Canada.

Trade Marks.

- 55,008. The Vulcanized Rubber Co., New York. The word *Rheingold*. For rubber combs.
 55,131. Goodyear Rubber Hose and Packing Co., Philadelphia, Pa. The word *Spartan*. For rubber hose, etc.
 55,133. Goodyear Rubber Hose and Packing Co., Philadelphia, Pa. The word *Rival*. For rubber belting, etc.
 55,134. Goodyear Rubber Hose and Packing Co., Philadelphia, Pa. The word *Marvel*. For rubber belting.
 56,135. Dr. Alexander & Posnansky, Chemische Fabrik, Coepenick, near Berlin, Germany. The word *Apee*. For erasers.

* [NOTE.—Printed copies of specifications of United States patents may be obtained from THE INDIA RUBBER WORLD office at ten cents each postpaid.]

GREAT BRITAIN AND IRELAND.

PATENT SPECIFICATIONS PUBLISHED.

The number given is that assigned to the Patent at the filing of the application, which in the case of these listed below was in 1909.

*Denotes Patents for American Inventions.

- [ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, MAY 3, 1911.]
 428 (1910). Tire valves. A. J. Jackson, Knutsford, Cheshire.
 511 (1910). Vehicle wheels. M. Brown, Dublin.
 527 (1910). Pneumatic india-rubber springs. E. B. Killen, London.
 585 (1910). Mud-guards. S. G. Jones, London.
 638 (1910). Vehicle wheels. W. Liebe Harkort, Gut-Harkorten near Haspe, Westphalia, Germany.
 662 (1910). Wheel tire. A. J. Michelin, Paris.
 670 (1910). Inflating device for tires. R. Connell, Christ Church, New Zealand.
 710 (1910). Vehicle wheels. R. A. Matthews, Beeston, Nottingham.
 718 (1910). India-rubber. L. A. M. Banchieri, Milan, Italy.
 719 (1910). India-rubber. L. A. M. Banchieri, Milan, Italy.
 *745 (1910). Vehicle wheels. D. Moriarty, New Orleans, Louisiana.
 783 (1910). Tire-valve. W. Loebinger, St. Apenstrasse, Cologne, Germany.
 818 (1910). Boots, etc. G. Looms, Market Harborough, Leicestershire.
 995 (1910). Belts and bands. J. Haslan, London.
 1,019 (1910). Wheel tires. P. Vandervelde, Brussels, Belgium.

- [ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, MAY 10, 1911.]
 1,083 (1910). Neck-tie retainers. L. M. Feery and M. Feery, London.
 1,104 (1910). Vehicle wheels. E. Webb, Marples, Cheshire.
 *1,176 (1910). Vehicle wheels. J. H. Van Arsdale, St. Louis, Missouri.
 *1,191 (1910). Boots, etc. F. L. Rouse, Somerville, Mass., U. S. A.
 *1,207 (1910). India-rubber compositions. J. Smith, Chicago, Illinois.
 1,239 (1910). Breathing apparatus. A. B. Draeger, H. Draegerwerk and B. Draeger, Luebeck, Germany.
 1,239 (1910). Vehicle wheels. L. G. Stidder, Harrow, Middlesex.
 1,270 (1910). Tread-surface attachment to wheel rim. L. E. Finelle, Le Havre, France.
 *1,317 (1910). Vehicle wheels. L. M. Wolffsohn, New York.
 1,339 (1910). Wheel tires. L. Gaucheraud, Lyon, France.
 1,414 (1910). Valves. E. E. Dudley and W. Dudley, London.

- [ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, MAY 17, 1911.]
 1,526 (1910). Vehicle wheels. C. Chertemps, Soissy-Sous-Montmorency, France.
 1,568 (1910). Rubber-tired winding wheel for sewing machine. Singer Mfg. Co., and H. Macfarlane, Singer, Clydebank, Dumbartonshire, Scotland.
 1,589 (1910). Dental gags. S. Goldenstein, Paris, France.
 1,780 (1910). Wheel tires. W. Molloy, Winnipeg, Canada.
 1,803 (1910). Molding-wheel tires. R. Haddam, London.
 1,842 (1910). Horseshoes. R. G. W. Pockett, Leckhampton, Gloucestershire.

- 1,851 (1910). Motor vehicles. S. R. Willcox, Hexton, Hertfordshire.
 1,852 (1910). Motor vehicles. S. R. Willcox, Hexton, Hertfordshire.
 1,916 (1910). Chain armor for pneumatic tires. M. A. Kennedy, Toronto, Canada.
 1,940 (1910). Wheel tires, etc. T. Sloper, Devizes, Wiltshire.
 2,023 (1910). Valves. J. Dowell, London.
 2,080 (1910). Vehicle wheels. V. Ferrand, Bingley, Yorkshire.

[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, MAY 24, 1911.]

- 2,136 (1910). Hot water bottles; stoppers. F. Schutze, London.
 2,272 (1910). Wheel tires. H. F. Anns, Beckenham, Kent.
 2,276 (1910). Vehicle wheels, pulleys. P. Powley, Leigh-on-Sea, Essex, and J. Brown, London.
 2,289 (1910). Wheel tires. C. L. Wells, Tipton, Staffordshire, and F. L. Ballard, Dudley.
 *2,375 (1910). Vehicle wheels. L. L. Rogers, Boston, Massachusetts.
 2,379 (1910). Vehicle wheels. L. A. Cottray, London.
 2,632 (1910). Vehicle wheels; springs. J. Slee, Newton le Willows, Lancashire.
 2,684 (1910). Boots, etc., of rubber. A. Goldsmith and C. Saunders, Kingswood, near Bristol.

[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, MAY 31, 1911.]

- 2,805 (1910). Vehicle wheels. A. F. Gunstone, Bath, England.
 2,891 (1910). Molding india-rubber balls, etc. I. Lund, Helsingborg, Sweden.
 2,902 (1910). Vehicle wheels. Société Generale des Etablissements Bergougnon et Cie., Clermont-ferrand, Puy-de-dome, France.
 2,956 (1910). Bottle-stoppers. G. Passler, Duesseldorf, Heerd, Germany.
 2,960 (1910). Anti-skidding tire. J. H. Marley and W. J. Carey, London.
 2,972 (1910). Wheel tires, etc. C. J. Watts, London.
 2,978 (1910). Wheel tires. J. F. W. Ure, London.
 3,112 (1910). Vehicle wheels. J. Donkin, Bornemouth.
 3,219 (1910). Vehicle wheels. W. E. Carmont, Richmond, Surrey, England.
 3,225 (1910). Wheel tires. E. J. Clark, Leytonstone, Essex, England.
 3,317 (1910). Anti-skidding wheel. B. E. Clarke, London.

THE FRENCH REPUBLIC.

PATENTS ISSUED (with Dates of Application).

- 422,521 (January 20, 1910). A. Ducasble and L. Michel. Pneumatic tire with concave, waved and progressive air-pressure chamber for ventilation for the wheels of all vehicles.
 422,600 (November 16). H. Kahn. Improved pneumatic tires.
 422,633 (November 16). T. Dunn. Improvement in pneumatic tires.
 422,527 (January 2). C. Damian and E. Porteret. Process for making rubber anti-skidding and non-slipping and for increasing its resistance to wear.
 422,723 (November 8). A. Whiteway and Charles Macintosh Co., Ltd. Tread for pneumatic or other elastic tires.
 422,791 (November 19). T. H. C. Lostalot. Elastic tire.
 422,906 (November 23). A. Plessory. Process and manufacture of medical sounds, canulae and bougies, drains, tubes and other surgical implements.
 422,955 (October 29). Société Farbenfabriken vorm. Friedr. Bayer & Co. Process of production of a substance resembling caoutchouc and products made from it.
 423,112 (November 28). H. C. Wolterick. Improvements in the method of producing isoprene.
 423,133 (November 29). Gabet. Process of reclaiming rubber.
 422,947 (October 24). P. E. Bourges. Pneumatic sole for all shoes.
 423,285 (December 3). T. H. Roberts. Improvements in shoes of rubber tires.
 423,289 (December 3). J. Clad. Elastic tires for vehicle wheels of any description.
 423,353 (December 3). B. Bariere. Rubber soles.
 423,584 (February 18). Société Française des Tissus Braisés. Fabric possessing great resistance to bursting, particularly applicable for dirigible balloons, tubes and tires.
 423,617 (December 13). Tire Chain Patent Co. Non-skid for wheel tires.
 423,618 (December 13). Tire Chain Patent Co. Non-skid device for wheel tires.
 423,619 (December 13). Tire Chain Patent Co. Non-skid for wheel tires.
 423,489 (December 9). H. E. Van der Linde. Process of reclaiming rubber.

[NOTE.—Printed copies of specifications of French patents can be obtained from R. Robet, Ingénieur-Conseil, 16 avenue de Villier, Paris, at 50 cents each, postpaid.]

SINCE 1904 THE CUSTOMS RETURNS OF BRITISH GUIANA have furnished, as a separate item, the exports of rubber from that colony. The figures as furnished by the secretary of the Permanent Exhibitions Committee, are as follows:

1904-5	pounds 951	1907-8	pounds 6,873
1905-6	4,114	1908-9	5,751
1906-7	2,563	1909-10	6,369

KAPOK IN LIFE PRESERVERS.

JAVANESE Kapok from the *Ceiba pentandra* is being used in the arts more and more. The elasticity of the fibre has given it prominence over all other fibre fillers. Besides, it is cleanly, does not absorb moisture readily, and will not rot. In 1889 there were exported from the Dutch possessions in the Far East 1,250 tons, in 1910 the business amounted to about



CUSHION STUFFED WITH KAPOK, USED AS LIFE PRESERVER.

9,000 tons. Recent German success in spinning it may eventuate in a fabric that will appeal to the rubber trade, or those who make life preservers and boat cushions may be interested to know that while a cork-filled life preserver will, when submerged, support six times its own weight, one stuffed with Kapok will hold up 30 times its weight. These facts are brought to our attention by the Department of Agriculture, Buitenzorg, Java.

WEARING GOLOSHES IN RUSSIA.

IT is more than a little difficult [writes somebody in Odessa], to understand why the average Englishman regards the wearing of rubbers as more or less an effeminate custom. From the hygienic point of view, the Russian attaches a prime importance to warm feet. In this country the wearing of goloshes during the late autumn, winter and early spring is universal among all classes save the peasantry and the rank and file of the army. The rubber is as commonly worn by commissioned officers as it is by civilians. The military rubbers are of special make, with brass heel-bits and sockets for the spur shanks. From the universities down to the primary schools the wearing of rubber overshoes in winter is obligatory.

The goloshes worn in Russia are all of domestic manufacture. The yearly output is estimated at 45,000,000 pairs, of which a considerable number is exported. Prices during 1910 were increased to nearly double the prices of the preceding year.

ONE indication of the progress of the city of Manáos, the rubber capital of the upper Amazon, is the existence there of a well equipped telephone service—the Empresa Telefonica de Manáos. The latest directory of this service, printed on one side of a large sheet, contains the names of 330 subscribers, including all the handlers of rubber in Manáos, the public offices, and leading professional men.

The Late S. H. C. Miner

AT THE age of seventy-six, full of years and of honors, after a career so picturesque and successful that its recital would read like a romance, S. H. C. Miner, Canada's "Grand Old Man," died of pneumonia, June 9, at 8:30 o'clock in the morning.

His life story has already been told in these pages (see "A Canadian Industrial Leader," THE INDIA RUBBER WORLD, July 1, 1907), but not completely, for his activities were so varied, his interests so large, his operations so extensive, that their mere listing would fill a volume. So, too, his benevolences, his helpfulness to educational and religious organizations, his kindnesses great and small were numberless.

His business interests touched almost every industry. He was, for example, the pioneer sole-leather tanner in Canada, and when the bark on his limits was exhausted, carried on extensive lumbering operations over the vast forest regions that he controlled. Since that time his experience and judgment, and above all his exceptional powers to direct and inspire those upon whom the active management of enterprises is laid, caused him to be sought after as a director by many Canadian companies. Among other directorates of which he was a member may be mentioned the L. H. Packard Co., Limited; the Standard Explosives Co., the Foster Rubber Co., the Walpole Rubber Co., the Rorton Tool and Mill Co.

He controlled the Hastings Shingle Manufacturing Co., of Vancouver, B. C., with a mill that turns out 600,000 shingles a day, besides which the company operate a very large lumber mill and own and control some of the largest timber properties in British Columbia.

Mr. Miner was instrumental in the formation of the International Coal and Coke Co., owning one of the best equipped coal mines in the Northwest. The capital of this company is \$3,000,000, and Mr. Miner was its largest stockholder. He was also one of the largest stockholders in the Alberta Coal and Coke Co., which owns some 5,000 acres of hard coal land in Alberta. This company is capitalized at \$2,500,000. Perhaps his most important creation, however, was the Granby-Consolidated Mining, Smelting and Power Co., a \$15,000,000 corporation operating copper mines in southern British Columbia.

His connection with the Granby Rubber Co. is well known. The concern was started in 1882 to manufacture rubber cloth-

ing. In 1887 Mr. Miner built new mills and appeared in the market with the well-known Granby rubber footwear. His factory made from 5,000 to 6,000 pairs of shoes a day, and the company, it is said, made more money in proportion to its output than any of the other Canadian factories. When the Canadian Consolidated Rubber Co. was formed Mr. Miner entered the combination and was president for a year. He, however, disagreed with the policy pursued and resigned, selling all of his stock holdings.

In 1909 he built in Granby two great rubber factories, one for the Miner Rubber Co., and the other for the Walpole Rubber Co. The former was for the manufacture of footwear and

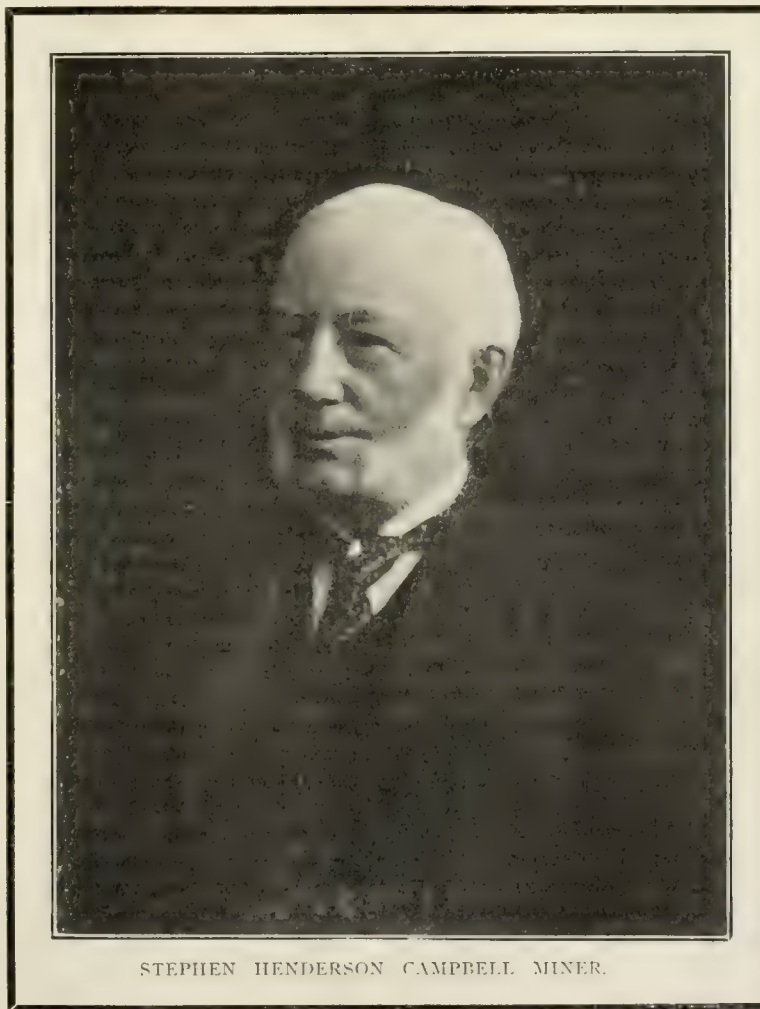
was in every way an up-to-date modern factory, designed, as Mr. Miner expressed it, "to be a monument to his memory." The other unit, the Walpole, was equipped to produce the successful specialties of the Massachusetts company of the same name and also to make a general line of mechanical rubber goods. The rubber shoe factory is operated by a nephew of the deceased, Mr. William H. Miner, who has for years been in training for the position and who possesses many of the characteristics that made his uncle so sound a man of business.

It was natural, with all of his commercial interests, that he should become more or less interested in banking, and he long ago became connected with the Eastern Townships Bank, with head office at Sherbrooke, Quebec, and with branches in 57 cities and towns throughout Canada. Of this bank, which has a capital of \$4,000,000, Mr. Miner was vice-president.

One of the most influential men in Canada, Mr.

Miner always resolutely refrained from accepting political office—the single exception being the mayoralty of the town of Granby, which he held for 23 years, the place being his summer home, and in fact, his own town financially and sentimentally.

Mr. Miner was president of the advisory board of the Congregational College of Montreal, in which he took great interest, and which, with many other good works and charities, he and Mrs. Miner supported with unstinted and unostentatious generosity. He had large business interests in the United States and was often in Boston and New York, and kept in touch with the rubber business as well as anybody in the Americas. Although born in Granby he was from New England stock, his



STEPHEN HENDERSON CAMPBELL MINER.

mother being born in Vermont, and while his father was born in Canada, his grandfather was a Connecticut Yankee and a graduate of Dartmouth College.

Personally Mr. Miner was of medium height, very compactly and strongly built, an exceedingly powerful man physically, athletic, vigorous, tireless. His mental grasp was astonishing, and while to the day of his death he had all of the energy and optimism of a man of twenty, he possessed a judgment sound and calm, and a courage that no event could shake. Of most abstemious and simple habit was he, and absolutely free from ostentation. He loved simplicity, truth, and fair dealing, and hated shams from the bottom of his manly heart. He was deeply religious, a Christian—a forceful, militant one. Just as he fought his way through a mob of drunken river-men in his youth and thrashed them all, so in his riper years he fought failure and turned it into success. He scourged tricksters out of his presence, and turned the weapon of the law upon the heads of those who invoked it. His thrift was pronounced, and he had no patience with waste of any kind; at the same time his benevolences amounted to many thousands of dollars a year.

The burial services were held in Granby at noon on Monday, June 12, to allow friends from a distance to attend. At that hour the streets of the little city were crowded with people from far and near, business associates, friends, employees and acquaintances who had come to pay their last tribute of respect and affection. The body lay in state in the house which was his home for so many years. From there it was borne to the Congregational Church, followed on foot by a great body of men who filled and overflowed the church, and who, after the church service, accompanied the sad procession to the cemetery.

The services at the church and at the grave, which were exceedingly simple and impressive, were conducted by his pastor, Rev. J. Lambert Alexander, assisted by Dr. Warriner, principal of the Congregational College, and the Rev. R. K. Black, a former pastor.

The pallbearers, who were his closest business associates, were R. R. Macaulay, A. Kent, A. C. Flumerfelt, G. Stevens, J. Mackinnon and Geo. Foster.

Mr. Miner is survived by a wife and two daughters, Mrs. E. M. Hill, of Montreal, and Mrs. James Black, of Vancouver; two brothers, W. W. Miner, of Granby, and George Miner, of Boston; also two nephews, W. H. and George Miner, of Granby, and one niece, Mary Miner, wife of Edwin Jackson, Montreal.

THE OBITUARY RECORD.

SAMUEL N. WILLIAMS.

SAMUEL N. WILLIAMS, for many years president of the Lycoming Rubber Co., who died at Williamsport, Pennsylvania, June 6, in his seventieth year, was an unusual man.

In personal appearance he bore a strong resemblance to the typical Uncle Sam, at least during all those years when his barber fashioned his beard after the accepted Uncle-Sam cut. In mind and character, too, he was a concrete illustration of the traditional Uncle Sam—shrewd, kind of heart, not looking to get the better of anybody else, but not at all likely to let anybody else get the better of him; fond of square dealing both ways; not given to contention, but not in the least perturbed by opposition, even of large proportions; undemonstrative but determined; with a Yankee knack of getting dollars to come his way, but with an open-handed though discreet and quiet way of passing them out where they would do the most good. He was a man whom everybody who knew him well spoke well of, even those who found it impossible to bend him to their way of thinking.

Up in Williamsport, where he was born and lived all his life, and where he had carried every conceivable kind of civic burden,

from presiding over the common council to the mayoralty, people and press alike eulogize him without stint, and say that their city has lost its first citizen.

His entrance into the rubber field occurred in 1882, when he, with a few friends, founded the Lycoming Rubber Co. He managed it, very successfully, for 28 years, and was its president most of that time. He merged his plant with the United States Rubber Co. when that corporation was formed in 1892, but retained the Lycoming presidency—and his personal independence unabated.

His rubber interests were profitable, but lumber was really his life vocation. He was cutting and selling lumber as early as 1864. That was his chief interest until he took up rubber, and even after that he continued his lumber associations, though less actively. Incidentally he was a director in a bank and a dozen other enterprises.

His neighbors say he left a million, but it was not the result of hoarding. He was a liberal giver; and he gave time and energy and hard work, as well as money. He was chairman of the trustees of the Presbyterian Church, president of the board of managers of the Public Hospital, and so on—and he worked for Williamsport all the time. The chief satisfaction he derived from the Lycoming rubber mill lay in the 500 Williamsport families that it supported.

A year ago last March he got a bad fall. Up to that time his health had been excellent and he had worked about as hard as ever—and that is saying a great deal. But after that fall he never was quite himself again. He was around town three days before he died, and though his last two days were spent in bed, the doctor pronounced it nothing serious, and his death, caused by a slight hemorrhage of the stomach, came quite unexpectedly.

An able, honorable, useful man—and interesting.

ALLAN MAGOWAN.

ALLAN MAGOWAN, who died in Trenton, New Jersey, June 1, at the age of 76, was born in the north of Ireland, of Scotch-English stock, and came to this country when but a child. His first experience in rubber work dates back to 1850, when he was employed in the factory of the New England Car Spring Co., at Thirty-third street and Third avenue, New York. He worked there for four years and then took a position in Trenton in a small factory which had formerly been owned by the pioneer rubber manufacturer of Trenton, Jonathan H. Green. Green having failed to make his rubber venture profitable, the factory was purchased by Garret Schenck and Hiram P. Dunbar, who started in the manufacture of mechanical rubber goods. Mr. Magowan was then an active and capable young man, a great admirer of Abraham Lincoln, and a prominent member of one of the *ante-bellum* clubs known as the "Wideawakes."

In 1859 Mr. Magowan went to Richmond, Virginia, to work for John J. Fields, the founder of the New Jersey Car Spring and Rubber Co., who had sent machinery there and set it up in the old Tredegar Iron Works for the manufacture of patent rubber carsprings. Mr. Magowan worked until the outbreak of the Civil War put a stop to the supply of rubber and other materials, and Mr. Fields went north to avoid being drafted into the Confederate army. Mr. Magowan, however, having an invalid wife, was not able to leave and was impressed by the Confederate government to make insulated wire for torpedoes and field work. The rubber covering was made largely of old carsprings ground fine, and boiled in spirits of turpentine. As Mr. Magowan had a couple of braiding machines he was able to make several miles of insulated wire, which was used in signaling during battles. Dr. Morris, who had charge of the Southern telegraph, also induced Mr. Magowan to build a machine for drawing wire, by giving him a competent machinist, and with a force of ten slaves he made a great deal of it, long pieces being used for telegraph work and the short for rivets.

In spite of the fact that Mr. Magowan was employed by the Confederate government he had never been asked to take an oath of allegiance to it, nor had he been questioned as to his sympathies. As he was at heart a strong Union man and working because he was obliged to, he could not forbear to strike one blow for the Union, and he therefore punctured with a sharp nail every piece of torpedo fuse that passed through his hands. The insulation was thus ruined and the torpedoes would never have exploded had the electric current been turned through the wire. After the battle of Antietam Mr. Magowan with his invalid wife was able to get a letter to the secretary of war, who gave him a permit to go north under a flag of truce during an exchange of prisoners. After reaching Philadelphia his wife died and he took her to Trenton for burial. He then went into a factory there and was employed at making swords.

factory of rubber matting and small mold work. This factory was burned September 24, 1902, and later rebuilt. Here he worked until the time of his death.

Personally, Mr. Magowan was an extremely modest, old-fashioned gentleman, of quiet tastes and unimpeachable integrity.

WILLIAM RICHARD BRIXEY.

W. R. Brixey, a leading manufacturer of insulated wire and cables, died at his home in Seymour, Conn., June 9.

He was born at Southampton, England, May 11, 1851, educated at a well-known grammar school and then entered the British Mercantile Marine Service, later commanding his own ship and visiting all the leading ports of the world. He came to this country in 1878, became an American citizen, and went into business with his brother-in-law, Mr. Austin G. Day, a



SAMUEL N. WILLIAMS.



ALLAN MAGOWAN.



WILLIAM RICHARD BRIXEY.

In 1865 Bramble & Sinclair had a small factory in Paterson, New Jersey, where they made mechanical rubber goods. Here Mr. Magowan worked for a short time, when J. J. Fields having moved his machinery from Richmond to Jersey City, he accepted a position with him. In 1867 he accepted a position as superintendent of the Boston Car Spring Co., owned by George and Hiram P. Dunbar, the factory being at Roxbury, Massachusetts. The lines of goods manufactured were carsprings and specialties in mechanical rubber goods. Two years later he accepted the position of superintendent of the Whitehead Brothers Rubber Co. in Trenton, remaining with them until 1880, when the Trenton Rubber Co. was incorporated, Frank A. Magowan, Spencer M. Alpaugh, Gardner Forman and Allan Magowan being equal owners. A few years later the same company started the Empire Rubber Co. for the manufacture of rubber carriage cloth. They afterwards bought the factory of the Star Rubber Co. and moved the machinery of the Empire works there. Later the same four purchased the plant of the Hamilton Rubber Co. and started there the Eastern Rubber Co.

This was the high tide of Allan Magowan's prosperity. Had he sold his interests at this time he would probably have realized half a million dollars. The financial troubles of his son, Frank A. Magowan, however, and the wish to assist him as much as possible, induced Mr. Magowan to sacrifice all of his holdings together with \$50,000 worth of life insurance. Again a poor man, Mr. Magowan with two of his sons, Joseph H. Magowan and

John T. Magowan, built a small plant and incorporated the Modern Rubber Manufacturing Co., the business being the manu-

pioneer in the American rubber industry, and the inventor of "Kerite." In 1879 he married Miss Frances N. DeWolfe, daughter of Alva G. DeWolfe, a co-worker of Mr. Day's, and also an inventor of note. The Day plant was at Seymour, Conn., and there Mr. Brixey developed the business with remarkable energy and intelligence, mastering it in every detail and becoming general manager on the death of Mr. Day, and sole proprietor upon the death of his sister, Mrs. Day.

Mr. Brixey was not satisfied with the use of his cables in the telegraph and telephone field, or with the early endorsement of such men as Morse, but pushed out into larger developments in other fields; some of the most noteworthy of these included the supplying and laying of the Alaska cable, the furnishing of the Panama zone cable, and the furnishing of the wires and cables for the Pennsylvania tunnel and terminal, connecting the two shores of the Hudson and East Rivers.

In 1908 Mr. Brixey incorporated the business as a company, and soon after retired, leaving it to the management of his eldest son, Richard D. Brixey, president of the Kerite Insulated Wire and Cable Co. Mr. Brixey left two other sons, Reginald W. Brixey, vice-president, and Austin D. Brixey, secretary of the company.

Mr. Brixey was quite active in public life, being a member of the American Institute of Electrical Engineers, and a member for many years of the Old Guard of New York City, with the rank of captain. He was a member of the Brooklyn Club, and a high degree Mason. At the time of the terrible subway explosion at Murray Hill, New York, in 1902, he was very seri-

ously injured by glass blown into his room at the adjacent hotel. His wonderful constitution, however, pulled him through injuries of a most serious character, though these probably undermined his health, which had always been of the best.

Mr. Brixey's wife died in 1909, and he is survived only by the three sons above mentioned.

Mr. Brixey was a man of sterling qualities and of unusual generosity. His death will be sincerely regretted by all who knew him.

EDWARD E. HELM.

The death is reported of Edward E. Helm, manager of the Gorham-Revere Rubber Co., Los Angeles, California. Mr. Helm was in an automobile accident some two weeks ago, receiving slight injuries. After an operation, however, blood-poisoning set in, which was the cause of his death. Mr. Helm was an exceedingly popular and successful man, well known throughout the Pacific coast. He was a member of many organizations including Free Masons and the B. P. O. E. (Elks). These two bodies took charge of the funeral services.

MAURICE I. BLANCHARD.

MAURICE I. BLANCHARD, vice-president and managing director of the Mechanical Rubber Co. (Cleveland, Ohio), died June 20 from a stroke of apoplexy. He was 54 years old and for many years was identified with the mechanical rubber goods business.

He was born in 1857 and had a public school education. Up to 1882 he was one of the best telegraph operators in the service of the Pennsylvania Railroad Co. In that year he became

acquainted with the late L. K. McClymonds, came to Cleveland and became identified with the Cleveland Rubber Co. Later, when it was merged with the Mechanical Rubber Co., he filled an important position and subsequently had full charge of the Cleveland business.

He was well known in business circles, was a member of the Chamber of Commerce, the Colonial and Cleveland Athletic Clubs. He leaves a widow and daughter, Mrs. Richard F. Valentine, and a son, H. G. Blanchard.

RUBBER IN THE GERMAN COLONIES.

PROFESSOR WARBURG, in a paper on "Der Kautschuk in dem Deutschen Kolonien," read before the international agricultural congress at the Brussels exhibition, presented the following summary of the extent of planting in those colonies. His figures related to hectares, which are converted here into acres:

	Acres.
German East Africa (almost exclusively <i>Manihot</i>).....	20,000
Kamerun (chiefly <i>Kickxia</i> with some <i>Hevea</i>).....	10,000
Togo (chiefly <i>Manihot</i> with some <i>Kickxia</i>)	500
New Guinea (chiefly <i>Ficus</i> with <i>Castilloa</i> and <i>Hevea</i>)....	6,250
Samoa (<i>Hevea</i>)	2,500
Total	39,250

The synopsis made by Professor Warburg would indicate the following division of this acreage among the various species: *Manihot*, 19,750; *Kickxia*, 10,000; *Ficus*, 5,000; *Hevea*, 3,750, and *Castilloa*, 705.

"HEVEA," "CASTILLOA" OR "CEARA."

IN discussing the question of the most suitable variety of rubber for the contemplated development of Costa Rican plantations, Señor J. E. van der Laat, Editor of the *Boletín de Fomento* (organ of the Costa Rican Ministry of Commerce), has grouped in concise tabular form the principal concrete facts available with regard to *Hevea*, *Castilloa* and *Ceara*. These three classes of rubber tree are, he considers, the only varieties deserving consideration. As he remarks, each of them has a natural zone,

where conditions are specially favorable and where the attempt to introduce any of the other classes would be a short-sighted policy. In view, however, of the fact that these natural zones are infrequent, he recommends the adoption in each instance of the variety presenting the greatest advantages under the different local conditions.

For the purpose of making the desired comparison, Señor van der Laat recommends making trials of *Hevea* and *Ceara* in different zones; thus establishing for these varieties results to be compared with those on record for *Castilloa*, hitherto exclusively used for Costa Rican plantations.

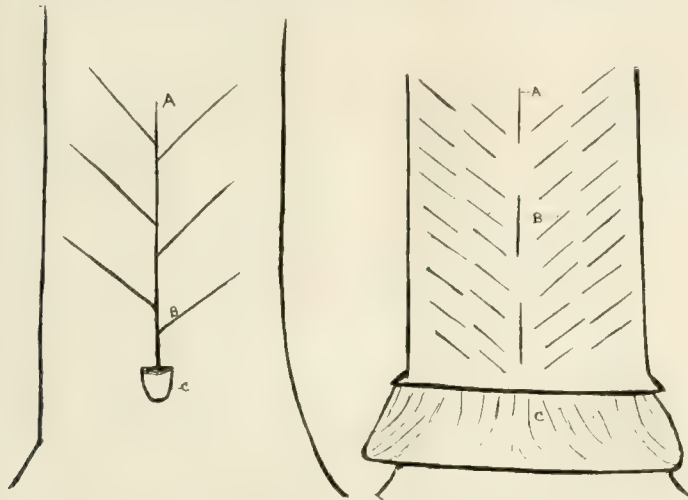
COMPARATIVE RESULTS OF HEVEA, CASTILLOA AND CEARA.

	<i>Hevea</i> .	<i>Castilloa</i> .	<i>Ceara</i> .
Under the most favorable conditions the first tapping can take place at the age of.....	3½ years	7 years	In 4th year
Product in latex is, at—			
4 years	7.11 ounces	None	Trifling
6 years	11/28 ounces	None	18 ounces
9 years	35 ounces	14 ounces	28 ounces
12 years	53 ounces	21 ounces	35 ounces
Complete development	106/140 ounces	70 ounces	53/90 ounces
Product of one acre (in full development) in dry rubber.....	610 pounds	305 pounds	395 pounds
Market value by latest advices.....	\$1.44 pound	\$1.17/1.26 pound	81/99 cents pound
Color of the rubber	Clear	Black	Somewhat clear
Analysis of the rubber—			
Pure rubber	94.60%	89.19%	76.25%
Resin	2.66%	12.42%	10.04%
Proteine	1.75%	0.87%	8.05%
Water	0.15%	0.32%	3.20%
Ash	0.14%	0.20%	2.46%
Proportion of pure rubber in latex.....	40/60%	25/40%	15/30%
*Result is obtained.....	In 25/50 weak tap-pings a year	In 2 or 3 copious tap-pings	No reliable data
	Not good	Not good	
Resistance to prolonged drought.....	3,300 feet	1,300 feet	5,000 feet
The tree thrives and can be successfully cultivated in the tropics up to the height of about.....			
Ideal zone—			
Altitude up to.....	1,300 feet	500 feet	2,000 feet
Average temperature	74/81° F.	77/85° F.	63/86° F.
Annual rainfall	60/80 inches	80/120 inches	30/80 inches
Exigencies of soil.....	Great fertility not required, but depth	Fertility and depth required	No great exigencies

LATERAL CONNECTION BETWEEN SYSTEMS OF LACTIFEROUS TUBES.

TO THE EDITOR OF THE INDIA RUBBER WORLD.—Sir: I note that you have offered a cup as a prize for the best system or method of tapping *Castilloa elastica*. I am exceedingly interested, but for reasons which will be apparent further on, feel debarred from competition. No such sense, however, restrains me from calling the attention of planters to the following method which at least has the merit of established practice in certain details. It is really a combination of two methods, in the first instance avoiding the continuous excision of bark, and in the latter reducing the cost of the collection of latex.

The accompanying sketch will enable the reader to easily grasp the details of this method. So far as known to me all practical work done in Mexico up to date involves a more or less continuous excision of bark. In Tobago, British West



HARVEY'S SYSTEM.

- A.—Permanent vertical channel.
B.—Permanent transverse channel.
C.—Cup.

TOBAGO SYSTEM.

- A.—Vertical channels renewed annually.
B.—Transverse channels renewed annually.
C.—Apron for collecting latex.

Indies, however, the writer was informed by Mr. Harry S. Smith, a representative of the Trinidad government, that their practice involved the use of a chisel and mallet. A series of perpendicular cuts are made, as shown in the sketch, the latex thus dripping down the surface in an irregular manner and necessitating the use of an adjustable apron at the base of the tree, from the surface of which the latex was scraped off with spoons. Upon inquiry Mr. Smith stated that several people were employed in the operation of tapping each tree, apparently a much heavier tax upon extraction than with the Mexican method.

Since it seems to be a pretty well-established fact that wound response, as occurring in the case of *Hevea Brasiliensis*, cannot be hoped for with *Castilloa elastica*, a continuous excision of bark cannot be lightly regarded and the merit of the Tobago method becomes apparent. It has occurred to me that the formation of permanent channels and further excisions of bark by combining the Tobago method of chisel cuts between the established channels, offers a promising field for further testing of this suggested method.

A remarkable fact in connection with the Tobago method is that a series of chisel cuts made, say, eight inches, one above the other, and laterally, say, four inches apart, seems to secure all the substantial flow, as upon essaying an intermediate series within a few minutes after completion of the initial cuts referred to, scarcely any latex is secured, which might indicate some lateral connection in the system of lactiferous tubes.

It is hardly practicable to apply the above system to trees that have become much scarred by previous tappings with resultant excrescences of renewed bark. The method contemplates in its application clean virgin trees, such as would be dealt with in the first tapping year of a planting of *Castilloa elastica*, and also a careful marking out of the position of the permanent channels.

JAMES C. HARVEY.

Sanborn, Estado de Vera Cruz, June 1, 1911.

[If Mr. Harvey's suggestion is as practical as it appears at first blush, it will be of the greatest value. The apron around the base of the tree has adways seemed a trifle cumbersome, and slow and difficult to adjust. If, therefore, by a system of permanent channels in the bark the latex can be led to cups placed at the base of the tree it will be much simpler and far more economical. The suggestion of possible lateral connection between the lactiferous systems is in the line of valuable discovery and should be thoroughly investigated.—THE EDITOR.]

ELASTIC PRODUCTS OF ANIMAL ORIGIN.

ACCORDING to *Revue de Chimie*, certain animal substances, specially treated, are capable of yielding an elastic product, identical as to the purposes for which it can be used, with rubber. Of this character are the osseous or cartilaginous fish, certain fresh and salt-water molluscs and even the membrane of the small intestine of mammals.

On boiling fish, the water in which it is boiled is found to contain a large quantity of albuminous matter, about 5 per cent. of the weight of the fish. After this albuminous matter, which contains a large proportion of phosphorus, has been precipitated with the aid of lactic or acetic acid, and separated by filtration, the liquid is slowly evaporated; on the upper surface a very thick skin will be formed. On removing, by agitation, all the bodies of liquid in contact with the air, the latter will assume a more and more solid consistency and is transformed into a mass, displaying more cohesive than adhesive properties. After having been subjected to a prolonged drying in a drying stove, it is treated preservatively by an addition of 5 per cent. of formaldehyde. There is thus obtained a characteristic substance that withstands traction and compression and can be vulcanized by the familiar processes. By adding a suitable quantity of sulphur, a product identical with ebonite is obtained. It may be stated that this new product is not soluble in the usual rubber solvents, such as sulphide of carbon, benzene, petroleum, ether, turpentine, very strong alcohol, etc. It is not a conductor of electricity. Its coloring substance is dissolved in weak alcohol and by this means it can be bleached.

The fish can be used industrially, as a whole. The precipitate of albuminous substance separated in the first place, is very rich in phosphorus and constitutes an alimentary product of great value. The muscular tissue can be transformed into a substance resembling ebonite by intense vulcanization. The intestines, bowels, etc., may be made into glue together with the bones, scales and bony parts, after the lime has first been extracted from them, by means of hydrochloric acid. In addition to being useful in the preparation of glue, these various parts may be usefully employed in the manufacture of fertilizer.

Furthermore, the elastic product, made as we have described, may be mixed with ordinary rubber in any proportion and the mixture can be vulcanized with just as good results as the materials taken separately.

THE MANAGER OF A WESTERN AUTOMOBILE manufacturing plant credits rubber tires with a record of 15,000 to 20,000 miles service and questions whether any iron or steel tire has ever accomplished such a mileage over the same roads and at a much lower rate of speed and with the same or a smaller load.

Progress of Rubber Planting.

ANGLO-MALAY RUBBER CO., LIMITED.

THE above company held its fifth annual meeting in London last month. The chairman, Sir Frank A. Swettenham, G. C. M. G., in delivering his annual address, reported 3,215 acres planted in 1910, of which approximately 1,500 acres were in bearing; there were 700 acres coming into tapping for the first time and 3,298 acres still in forest. From the 1,500 acres in bearing, 673,132 pounds of rubber were obtained, which sold for £208,093 7s. 6d. after paying commission on sales, brokerage, etc. The net profit figured out at £142,236 19s. 5d., which, adding the balance forward from the preceding year, made £155,149 14s. 1d. (\$755,033). Three interim dividends, at the rate of 25 per cent. each having already been paid, a final dividend of 100 per cent. was recommended.

TANJONG OLOK (HAWAII) PLANTATION, LTD.

IN his report to the general meeting, held June 5, at Honolulu, the manager recorded the commencement of tapping, a year ahead of the anticipated time, with 1,500 trees, and the subse-



THREE-YEAR-OLD TREE AT TANJONG OLOK.

quent addition of 2,208 trees, making 3,708 trees tapped during the year. The amount of rubber collected was stated as 1,325 pounds, which was sold for \$1,454, the cost of tapping collecting, factory and shipping charges being \$497. The manager reports that enough rubber is being obtained, from the area in bearing, to pay for the up-keep of that area, so that if funds are provided for taking care of the unproducing area, there should be an available cash profit at the end of the year.

RIVERSIDE RUBBER CO., SELANGOR, F. M. S.

THE accounts presented to the second annual meeting show £1,127 19s. 7d. (\$5,483) credited to profit and loss, which the directors recommend should be carried to next year's account. The company report 15,402 pounds of dry rubber harvested for five months ending May 31, 1911.

THE SAPUMALKANDE RUBBER CO., LIMITED.

THE first annual meeting of the above company was held in London on May 30. The report of the directors, covering the period ending December 31, 1910, showed a rubber crop of 69,526 pounds, for which a net average price of 5 shillings 7½ pence per pound was realized against an estate cost of 1s. 9½d. per pound. The area planted to rubber alone was given as 810 acres, of tea interplanted with rubber at 1,054 acres. The estimates for 1911 included 108,000 pounds of rubber at an estate cost of 1 shilling 3¼ pence per pound, with a liberal allowance for cultivation. Forward contracts were reported as having been

entered into for the delivery of 33,600 pounds of No. 1 rubber at an average price equal to 6s. 1d. per pound, London terms.

The net profits available for distribution were reported as £12,266 4s. 5d. (\$59,693), from which the directors recommended a distribution of 8 per cent., the writing off of £2,212 11s. 2d. preliminary expenses and the carrying forward of £1,893 13s. 3d. to next year's account.

THE MALAYALAM RUBBER AND PRODUCE CO.

THE second annual report of the directors of the above company, prepared for presentation to the second annual general meeting held May 30, and covering the period from August 19, when the company was incorporated, to December 31, of that year, showed a rubber crop, for the period in question, of 13,212 pounds; the cost, f. o. b. was 1s. 44d. per pound and the net selling price averaged 5s. 156d. per pound, equivalent to a profit of 3s. 9.15d. per pound. The net profit on the operation of the property, for the above period, was £19,423 6s. 2d. (\$90,609). From this it was proposed to pay a dividend of 6 per cent., leaving £4,105 to carry forward to next year's account. The estimated crop of rubber for 1911 is 31,000 pounds.

SUNGEI BULOH RUBBER COMPANY.

Sungei Buloh Rubber Company held an ordinary general meeting at which the presiding officer described the cost of the completely equipped estate at £47,085, or £20,000 in excess of the forecast.

HARRISONS & CROSFIELD, LTD.

Harrisons and Crosfield, Limited, well known from their connection as brokers, managers, agents, etc., with the rubber interests, are issuing 200,000 five and a half per cent. cumulative preference shares of £1 each at par, to rank in all respects with the 300,000 five and a half per cent. cumulative preference shares already issued. The capital of the company is £657,500, in 500,000 five and a half per cent. cumulative preference shares, of which 300,000 have already been issued and 200,000 have been recently created; 150,000 preferred ordinary shares of £1 each and 150,000 management shares of 1s. each. The company has branches in Medan, Sumatra; Melbourne, Australia; Batavia, Java and Quilon, Southern India.

RUBBER PLANTATION CORPORATIONS.

FOLLOWING are the names of companies recently organized to engage in the rubber-planting business that have been registered by the London Stock Exchange:

Sumatra Jelutong and Rubber Estates (May 3); capital £200,000 in £1 shares. Cultivators of and dealers in rubber, gutta percha, gum, etc., to acquire certain concessions and estates in Sumatra and to adopt an agreement with the General Exploration and Finance Syndicate, Limited. First directors, W. T. Lane and F. D. Holcombe.

G. W. Christian & Co. (May 2); capital £60,000 in £1 shares. To carry on the business of African merchants, cultivators of and dealers in tropical produce, rubber, etc., and to acquire a business carried on at various places in Nigeria and elsewhere.

Parit-Bruas (Malay) Rubber Company (May 3); capital £36,000 in £1 shares. To acquire the Bruas Estate, of about 2,000 acres, near Parit, Perak (Federated Malay States). Agreement with the Malay Rubber Planters, Limited. First directors: J. C. G. McFerran, chairman; W. H. Peach, J. P. Tatham, F. R. Bastow and A. J. Stevens, all directors Malay Rubber Planters, Limited.

Nigeria Proprietary Co. (April 29); capital £50,000 in £1 shares. To carry on business of general miners, rubber growers, etc., and to adopt an agreement with Sigismund Moritz.

MEXICAN RUBBER PLANTATION NOTES.

IT is an interesting fact that the plantations of *Castilloa* that suffered from fire and that were thought to be utterly destroyed, are sending up lusty sprouts that look as if the fields would be re-forested, and that very soon. At Obispo, for example, the new growth is very strong and growing faster than ever. With a root development uninjured, the trees are bound to go ahead much faster than would new plantings.

Concerning the shooting of the late Dr. Pehr Olsson-Seffer, it is said that he resembled to a marked degree a *Jefe politico*, who was heartily hated, and it is probable that one of the insurrectos mistaking him for that official, thought he was paying off an old grudge.

El Palmar Rubber Estates, Limited, which was purchased by a Scotch company, is planting considerable of the land to *Hevea Brasiliensis*. At present they have 10,000 thrifty trees planted from stumps that are about five months old, and are 4½ feet high and quite stocky. As far as can be seen, they are developing just as fast as they would in any other part of the tropical world. Next year the company will put in 30,000 more, for which seed has already been ordered. In their first seed venture, which came from Ceylon, they saved more than 80 per cent. This perhaps is due to the explicit directions given by the manager, J. C. Harvey, who it will be remembered, solved the problem of seed carriage by his theory of almost arrested germination by dampened charcoal. La Buena Ventura Plantation produced one ton of *Castilloa* rubber this year, which, together with the Cacao crop, paid all of the plantation expenses, and left a small profit.

J. Herbert Foster, manager of the Meriden Plantation, is living in the city of Veracruz, and running a correspondence school in Spanish. He keeps an eye on the Meriden, however, and his capable foreman, Don Mateo, got enough *Castilloa* rubber to pay all of the running expenses. They tapped 3,500 trees once and got 299 pounds of rubber, which was sold at \$349.90 gold.

Some one of these days there is going to be a dropping off in the chicle exports from Mexico. Your correspondent not long ago had occasion to travel over the part of the country where the tree has been most abundant and where the "Chewing Gum Trust" is getting the most of its supplies. The trees are dying and few new ones are taking their places. Just how the killing of the trees can be avoided is not apparent. The outer bark is so hard that it takes a strong man with a machete to cut through so as to free the latex. The wood is unavoidably injured by this rough cutting, and it rots, and the tree dies.

An exhaustive report of the President of the Tehuantepec Rubber Culture Co., dated May 26, 1911, and covering, with a table of measurements of trees and a reprint of the report made by Harry S. Smith to the Board of Agriculture of Trinidad, W. I., 42 octavo pages has been published for distribution to stockholders in the company. It gives a detailed history of the development of the company's Rubio plantation, and describes its present condition and prospects, in an exceedingly lucid and interesting manner.

EXOTIC RUBBERS IN MEXICO.

A FRIEND of THE INDIA RUBBER WORLD in Mexico, who wrote requesting some information regarding *Manihot Glaziovii*, sends a further communication, from which we quote:

"I was not very enthusiastic before about the planting of *Manihot* in Mexico! I now know that it will not answer our purpose, and will drop it. I have met lately a friend who has been experimenting with Pará rubber (*Hevea*) in the Pichucales district of Chiapas. The seed came from Ceylon, arrived in good condition and sprouted well, but the trees have made a poor growth and seem to show less vigor as time goes on. Different lots were planted in a low ground and on rich, hilly soil, but the poor results were practically repeated in all parts."

INDIA-RUBBER AND BALATA IN DUTCH GUIANA.

By Our Regular Correspondent.

OPENING "de Koloniale Staten" our "House of Commons," his Excellency Governor Fock of Surinam, as usual, reviewed the economical events of the past year. He stated that the crop of sugar, cocoa and rice was larger than in the previous year. For cocoa the quantity was 20,400 bags of 100 kilos.

Great interest was shown by the planters in rubber cultivation. The variety planted out was the *Hevea Brasiliensis*. The growth of the young trees was very favorable. The number of young trees from one to three years now growing was 225,000.

No disturbing diseases have appeared in rubber. On the government rubber estate "Slootwijk," a great number of the trees now 15 months old were making branches and the growth of these young trees is in no way second to any of those our Director of Agriculture saw in the Federated Malay States, one of the best known rubber countries. The bananas also did well at "Slootwijk." Exportations of balata are increasing. The quantity exported in 1908 was 998,800 pounds; in 1909 it was 1,500,400 pounds, and in 1910 1,964,600 pounds.

About 2,500,000 acres were leased out as balata concessions. A large company in Holland has taken up the interests of two balata firms in Surinam. Wild rubber exportation is also drawing attention. A gold mining corporation, the Compagnie des Mines d'Or of the Marowynne river has formed a company for the exploitation of wild and cultivated rubber in its territory. The gold industry has not been satisfactory. The export of gold came down from 2,492 pounds in 1909 to 2,378 pounds in 1910.

According to information from the directors of the Balata Compagnie Suriname in Rotterdam, this is the company that bought up all the 425 shares of the Balata Compagnie Guyana for 425 new shares of the Balata Compagnie Suriname. These new shares will have the same right as to dividends as the old ones. The Balata Compagnie Guyana was formed and includes the whole balata enterprise of J. M. Da Costa at Paramaribo and G. H. de Granada at Wasbenaar (Holland). These gentlemen guarantee a net profit for the year 1911 of at least 150,000 fl. (\$60,300). In 1910 they got a crop of 176,000 pounds of balata, working with 250 laborers, and the net profit has been 100,000 fl. (\$40,200). A specification of what they bring into the company reads as follows.

Money paid to laborers and advances.....fl.	176,000	(\$70,752)
Food and provisions.....	34,500	(\$13,869)
Tools, camps, boats.....	25,000	(\$10,050)
Costs of prospectations.....	12,500	(\$5,025)
Taxes on concessions.....	27,000	(\$10,854)
All rights on balata concessions already pros-		
pected covering an area of 200,000.....	150,000	(\$60,300)

fl. 425,000 (= \$170,850)

As the concessions of the Guyana are located next and between those of the Suriname company, the directors think the new agreement a very useful one. J. M. da Costa will remain as manager of the business in Surinam, and G. H. de Granada will be taken up in the directory, if the shareholders at the first annual meeting will consent to do so. Of the 425 shares of Mr. da Costa and Granada, 260 will be at the disposition of the old shareholders at the rate of 140 per cent. The new shares will enjoy all and full rights and dividends the first book year.

AN ENQUIRY PUBLISHED IN A RECENT report from a United States consular officer in Portugal, calls for the names of American firms who are in a position to export surgical rubber goods. The reference number of the enquiry, to which replies may be addressed, care of the Bureau of Manufactures, Department of Commerce and Labor, Washington, D. C., is 6,861.

Some Rubbers Interests in Europe.

GERMANY.

ASBEST und Gummiwerke. Alfred Calmon, A. G., Hamburg. The general meeting of the company recently held was numerously attended and more than usual interest was manifested in the proceeding on account of the heavy falling off in last year's business. The business-management was sharply criticised and the deposition of General Director Calmon and his replacement by a supervisory commission, also an examination by an accounting corporation was suggested. The motion for the appointment of a supervisory commission was defeated by 2,588 to 256 votes and after a prolonged session and active debate, the retiring members of the Board of Trustees were re-elected by acclamation.

Phil. Penin Gummiwaren Fabrik. A. G. At a meeting of the trustees, the treasurer's report and the profit and loss statement were accepted. The net profit for the business year 1910, in spite of increased trading, was smaller, but the distribution of a dividend of 25 per cent. for the year was nevertheless approved. For the current year the volume of business has so far been satisfactory.

Globus Gummi und Asbestwerke G. m. b. H. Ahrenstock, near Luebeck, at a meeting held May 8, 1911, increased the capital stock by 150,000 marks (\$35,700).

The Ostafrikanische Ceara Compagnie, A. G., has been registered at Berlin with a capital of 300,000 marks (\$71,400), and Dr. Walter Finklor, as manager. The company will establish works for washing and cleaning rubber in East Africa.

H. Penther, engineer, of Dresden, has purchased, in the vicinity of Pirna, a factory site of about 50 acres, on which he will erect a reclaiming works of large capacity. He proposes particularly to feature his various patented reclaiming apparatuses in its equipment.

Gummiwerk Oberspree G. m. b. H., Berlin. In accordance with the resolution of January 6, 1911, the capital stock has been increased from 1,500,000 to 2,500,000 marks (\$595,000).

Mittel Deutschen Gummiwaren fabrik Louis Peter, A. G., Frankfurt A. M. Commercial councillor Louis Peter, founder and director of this corporation, recently celebrated his 70th birthday. He established a rubber goods business in Frankfurt in 1872, that has grown into the present great concern. In commemoration of his birthday, he donated 20,000 marks (\$4,760) to the workmen's association of his works and 15,000 marks (\$3,570) to their hospital.

The Muringer Schlauchweberei und Gummiwerk, of Walterhausen, Germany, have added 390,000 marks [= \$92,820] to their working capital and are now doing business on a capitalization of 800,000 marks [= \$190,400].

L. Schetter & Co., Limited, announce their commencement of business, under this title, as dealers in old rubber, reclaimed rubber, gutta percha, etc., with headquarters at Gereonshaus, 97-98, Cologne, Germany. Mr. L. Schetter has been appointed manager of the new firm.

AUSTRIA-HUNGARY.

The Oesterreichische-Hutdraht, Gimpfen-und Kabel Fabrikation, of Vienna, has been registered commercially; capital, 30,000 crowns [= \$6,090]. Karl Rueckl is business manager.

Oesterreichische-Amerikanische Gummi-Fabriks, A. G., Vienna, at the regular general meeting recently held, a report was presented in which the past year was referred to as the most critical and the most difficult the rubber industry had ever experienced. A net profit of 457,873 crowns [= \$92,936] was reported for the year.

RUSSIA.

THE dividend of the Russian-American India-Rubber Co., "Treugolnik," of St. Petersburg, for the business year 1909-10, was 20 per cent., on a capital of 18,000,000 rubles (\$9,270,000), the distribution amounting to \$1,954,000.

GREAT BRITAIN.

W. D. A. Bates, Limited, India Rubber Works, St. Mary's Mills, Leicester, England, issue a notice under date May 22, to the effect that Alfred Henry Faulkner has resigned his directorship and is no longer connected with the company.

The sale of waterproof collars is reported to be very large in Birmingham, on account of the great number of persons employed in trades which involve the soiling of clothing, and to whom a collar readily cleaned proves desirable. It is mentioned that many schoolboys wear such collars, and even commercial travelers.

SWEDEN.

Aktieselskabet Den Norske Reimfabrik, manufacturers of belting and mechanical rubber goods, at their recent general meeting, declared a dividend of 6 per cent., same as last year. Peter Corneliusen was re-elected to the Board of Directors.

GERMAN EXPORTS OF MOTOR VEHICLES IN 1910.

The German exportation of motor vehicles and parts during 1910, as compared with the preceding year, shows marked increase, that of complete motor vehicles alone being more than 60 per cent. greater. According to the latest statistics, published by the *Zeitschrift des Mitteleuropaeischen Motorwagen-vereins*, the value of the exports of passenger motor vehicles, last year, amounted to 29 million marks (compared with 17 million marks for 1909) of freight motor cars 3 million marks (1909 two millions) of motorcycles 1 million (same as last year) and of motors for vehicles and motorcycles 16 millions, compared with 11 millions. Based on previous computations, it is estimated that the value of pneumatic tires exported will amount to at least 40 million marks (30 millions for 1909) and that of parts, to at least 25 million marks (20 millions for 1909) so that altogether, exports of complete motor vehicles amounted in value to 114 million marks (81 millions in 1909). This takes no account of the motorboats and dirigible air-craft and their parts, of which there is no official classification, but which may also be estimated at several million marks.

GERMANY'S LARGE BICYCLE EXPORTS.

The notable increase, in the exports of bicycles from Germany during the past year, is commented on by *Gummi-Zeitung*. During the period in question, bicycles and parts, to the value of more than 70,000,000 marks [= \$17,360,000] have been supplied to foreign countries. In comparison with the preceding year, the sales to England, Holland, Italy, Denmark, Austria-Hungary, Switzerland, Russia, Belgium, Sweden, Argentina, Brazil and the United States, have especially increased. A marked decline is however, recorded in the exports to France, on account of the new French tariff. In assembled condition, as complete bicycles, about 89,000 have been shipped abroad; about 7 to 8 times as large, however, were the shipments of bicycle parts. The motorcycles exported were only 1,880 in number, valued at 1,200,000 marks [= \$285,600].

This was a slight decline, as compared with last year. On the other hand, the exports of motor vehicles increased materially and attained a value, in round figures, of 31,000,000 marks [= \$7,378,000]. Many automobiles were sent to Russia, Austria-Hungary, Holland, England, Belgium, Denmark and South America.

THE INCOMPATIBILITY OF LIQUID INSULATING MATERIALS.

A VERY interesting point and one not generally known in connection with the use of liquid or plastic insulating materials in the manufacture and installation of electrical apparatus, is the necessity of avoiding the use on the same job of different materials which are, so to speak, incompatible with each other, says the expert of the Massachusetts Chemical Co. There is a mistaken tendency in the electrical trade to apply successive coats of different kinds of materials on the work in hand—field winding, armature coil, or whatever it may be. Such practice is the cause of much disappointment in the behavior of the insulations, for the reason that many which are of good quality individually are robbed of their real value. This loss of quality by intimate physical association is here termed "incompatibility," and its cause and effect among certain insulating substances are due to radical differences in their chemical and physical properties, and may be illustrated by a few examples from actual practice.

It is well known that shellac is soluble and carried in solution by liquids of the alcohol family, paraffine by liquids of the naphtha family and still other insulating materials by those of the coal-tar family. But these different substances will not mix with each other, and when solutions of them are applied as successive coats, as insulation on a winding or other part of a piece of electrical apparatus, the result is a composite but non-homogeneous layer which will give trouble sooner or later. The two parts of the layer will not only have no affinity or adhesiveness toward one another, but will mutually repel and injure each other. Thus it is impossible to mix shellac and paraffine, and it is also impossible to produce a strong enough flux or solvent, to make the compound homogeneous. These two different solids, in suspension or solution in a plastic mass in which they are free to flow will separate in exactly the same way as liquids; and any exposure to heat—as in the ordinary use of the electrical apparatus in which the insulation is employed—will cause chemical disturbances that will eventually break down and destroy insulation.

RUBBER AND AVIATION.

THE important part that rubber is destined to play in aerial navigation is the more thoroughly realized when we consider the number of manufacturers of established reputation, who have entered the field and are devoting careful attention to this new branch of the business. At the Second National Exhibition of Aerial Craft, held in Boston, there was every evidence of the early advent of a new and important industry, in connection with aviation. In addition to recognized manufacturers of aeroplanes of more than national reputation, there were many manufacturers of engines, propellers, fabric, tires and other accessories, whose presence afforded the best proof of the growing importance of this interest and the significance attached to it as a field for commercial exploitation. The fact that aerial navigation is generally accepted as a factor in military operations, lends no little to its importance.

The lightness, strength to resist landing shocks and resiliency to absorb them that are essential features of the aeroplane tire, are provided for particularly in the Palmer system of tire construction that became so widely popular during the bicycle boom. The B. F. Goodrich Company have adopted this principle in the construction of their special aeroplane tires, and the Palmer aeroplane tires, as they are known, have become recognized as the proper aeroplane equipment. On the "Hudson Flyer," with which he made his famous trip from Albany to New York, Glenn Curtis used the Palmer tire, and it was conspicuous on a number of the machines shown at the Boston Exhibition.

A MEMORIAL TO H. A. WICKHAM.

IT IS truly and altogether right that the rubber trade should recognize H. A. Wickham's service in securing Pará rubber seed for the Far East, a service not only to the world, but to the planter and manufacturer as well. The action of the Rubber Growers' Association, in London, therefore, described below, will, without doubt, have cordial support. They sent out a circular suggesting that the occasion of the forthcoming Rubber Exhibition in that city furnishes a fitting opportunity for the offering of "some suitable token of recognition to those through whose instrumentality the original seed of the *Hevea Brasiliensis* was brought to the eastern hemisphere," thereby forming the nucleus from which the important rubber planting industry of the East has sprung.



H. A. WICKHAM.

It is proposed to present a commemorative piece of plate to the Royal Kew Gardens, the management of which arranged to procure the seeds, and to Mr. Wickham, in recognition of his energy and resource in carrying out this commission, "a more substantial mark of the gratitude of the rubber planters of the Eastern Hemisphere, for the very important part he played in the founding of this great industry."

In "The Rubber Country of the Amazon," the editor of THE INDIA RUBBER WORLD thus speaks of Wickham's achievement: "It is a good thing to remember that Santarem is the place where Wickham, back in the '70s, was installing a small rubber plantation and watching for opportunity. Luckily for the planters in the Far East it came, when the big British steamer *Amazonas*, without cargo and without cash to buy one, hove in sight. Wickham, practically penniless, chartered it for the Indian government, stored baskets of *Hevea* seeds in its huge hold, won hasty clearance from Pará for "rare botanic specimens," and got the seeds to the Kew gardens alive and vital. Every *Hevea* in the Far East and thousands in other parts of the world are a direct result of that act. The British planters should erect a splendid monument at Santarem in honor of Wickham, but they will never do it—with the consent of the Brazilians."

RUBBER IMPORTS IN MARCH.

THE imports of crude India rubber for the month of March, 1911, amounted in value to \$7,700,000, compared with \$18,400,000 for the same month in 1910. For the nine months ending March, 1911, the imports of crude rubber were valued at \$58,900,000, as compared with \$83,000,000 for the same period ending 1910.

The Valuation of Crude Rubber.

THE following propositions relating to the uniform execution of comparative preliminary work in the determination of the value of crude rubber were prepared by Dr. Fritz Frank, Berlin, for the German section of the International Rubber Testing Committee.

A. GENERAL REPORT.

At the first session of the German section of the "International Rubber Testing Committee" in Berlin, Professor Dr. Warburg, Berlin, secretary of the German section, and the president, Dr. Berkhout, presented a most important question, the provision of standards for the valuation of raw rubber materials.

Dr. Frank, Berlin, reported on experiments in this direction. He proposed to follow the suggestions made independently of each other and according to different methods, by members of the commission, including Dr. Axelrod—whose death had occurred in the meantime—and later by Dr. Schidrowitz, London, by the comparative measurement of the viscosity of rubber solutions. After Dr. Kuhlmann, Harburg and Dr. Thiel, Ober-Schönweide, as rubber manufacturers had described their own satisfactory experience in the valuation of raw rubber by comparative measurement of the viscosity of similar solutions prepared from it, Dr. Frank was commissioned to work up this apparently practicable method of working in such manner as to make it possible for him to submit it, in the form of a proposition to the committee as a whole and to make it generally known, so that, by as numerous a body as possible, experiments could be conducted at different points and in this manner unobjectionable matter could be obtained, from which it might be learned whether this method of working is adapted for an international system of testing crude rubber.

By written communication with all the members of the German section of the committee, in the further development of initial steps, the details of the proposition, in regard to a generally comparable working system, were perfected.

Before undertaking in the course of his paper to report on the propositions and the carrying out in detail of the working plan, the author emphatically stated that the members of the commission do not question that the proposed method is still in the early stages of its development. It is intended to be only a proposition, the general or special usefulness or non-utility of which remains to be determined by the comparative combined work of the colleagues interested. Inasmuch as the comparative working results demand the employment of corresponding, or at least similar processes, it is proposed to describe them as they are here employed and as they have already found further introduction, on the basis of these propositions.

The theoretical speculative foundation for the hitherto unproved applicability of the viscosity calculation of rubber solutions, in estimating the value of rubber, lies in the empirical experience that solid, good rubber varieties furnish more viscous solutions than such as are soft and of low grade value. On this experience the acceptance of the applicability of calculations of this nature, in the valuation of crude rubber, has been based. As already stated, in Dr. Axelrod, the deceased member of the commission, it found a special advocate, and in the works of the English member, Dr. Schidrowitz, it has found further support. Numerous comparative operations, conducted here, have, moreover, furnished a certain support for the general dissemination of the proposition. In regard to the experiments made here, it seems fitting to state that it is not the comparison of the positive viscosity figures that appears to constitute an actual value standard, but that only the comparison of figures, with regard to the various kinds, or according to their place of

origin, will be practicable. As comprehensive a co-operation of all circles as possible is desired. It is not intended, however, that the propositions made known herewith shall in any respect limit the efforts and experiments that may be made to solve the problem by other methods. The programme of the comparable and more general work according to the proposed plan of working is briefly set forth as follows:

1. Comparative determinations of the viscosity of rubber solutions in uniformly prescribed apparatus according to uniformly determined methods of definite intervals.

2. Comparison of the viscosity values determined, with the chemical-physical investigation results obtained with vulcanized crude rubbers, subjected to the same preliminary treatment and prepared in the same manner.

B. SPECIAL REPORT ON THE APPARATUS AND WORKING METHODS IN DETAIL.

I. THE APPARATUS FOR DETERMINING VISCOSITY.

The apparatus proposed for general use (*) after having undergone various modifications, consists of the following parts. (Fig. 1.) The receiver *a*, is a pear-shaped glass vessel, which is equipped on the side with the inflow socket *b*, provided with a ground in stopper, and at *c* with a similar socket, which carries the closing rod *d*. The vessel shows three marks for the measurement of 200 cc. m. The three marks serve for measuring in and at the same time for the establishment of a certain level. At the lower end, at *e*, the vessel has a discharge pipe of metal of a predetermined length, which is firmly set in a glass socket. The closing rod *d* is ground to close this outlet perfectly. The aluminum closing rod is, moreover, carried by the double guides in the holder *f*. By means of the ground collar *g*, the glass vessel *a* is attached to the receiving cylinder *h*. Both grindings have in *i* connecting openings to allow the air to escape, or by slightly turning the vessel *h* they may be closed. The receiving cylinder *h* is graduated, and from the 95 cc. m. to the 105 cc. m. mark is contracted to permit of accurate reading. The cylinder is mounted on a broad wooden foot. The dimensions are invariable. The apparatus is constructed, under my directions, by a Berlin firm.**

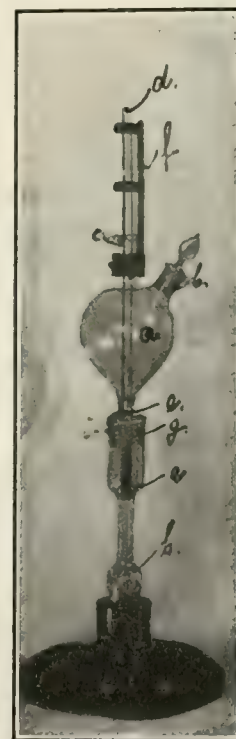


FIG. 1.

II. CONDUCTING THE CRUDE RUBBER TEST.

A properly taken average sample of crude rubber of 250 to

*In the construction of the apparatus, I have followed the suggestions of Axelrod, *Gummi-Zeitung*, 1905, page 1054. In exhaustive tests, in new construction, great difficulty was experienced owing to its being almost impossible to make the outflow pipe, of 7 m. m. clear width, absolutely uniform and to grind or melt off the end absolutely level. Further difficulty was experienced in the lead and boring of the cock; finally the width of the receiving cylinder prevented exact reading. All these separate difficulties resulted in such inaccuracies in the apparatus constructed, that one after another, the above-named sources of error had to be eliminated.

**German Registered Design of the firm of Paul Altmann, Berlin, Louisa street, No. 47. The apparatus, under exact enumeration, is tested by the Chemical Laboratory for Commerce and Industry of Dr. Henriques, successor. The second illustration shows a complicated apparatus consisting of the parts of the viscosimeter with two closing rods, thermometer, filling funnel, seconds clock and a bottle of glycerine of 1.25 spec. grav., for testing the apparatus.

300 g. weight is first of all, for the preliminary work done in factories and laboratories, cut up, softened for 30 minutes in hot water, rapidly washed in the washing rollers by a competent operator, and then dried in the air, in a place protected from light, without artificial heat. All stretching during the washing process and all kneading and heating must absolutely be avoided, but the sample must be washed to a film as thin as paper, which facilitates rapid drying and solution. Treatment in the rollers must not last longer than 20 minutes.

Departures from the method of washing must be absolutely avoided; where this is impossible with differing methods, the departures must be accurately recorded in detail, in the report of the results of the experiment. Generally speaking stress must be laid on the necessity for the most careful recording of the various observations, so that differences may be explained.

It is reserved for later experiments so to simplify the washing that material that has not been rolled can be used for viscosity determinations, in order that planters and dealers, who have no washing apparatus, may be enabled themselves to control their crop as a commercial product.

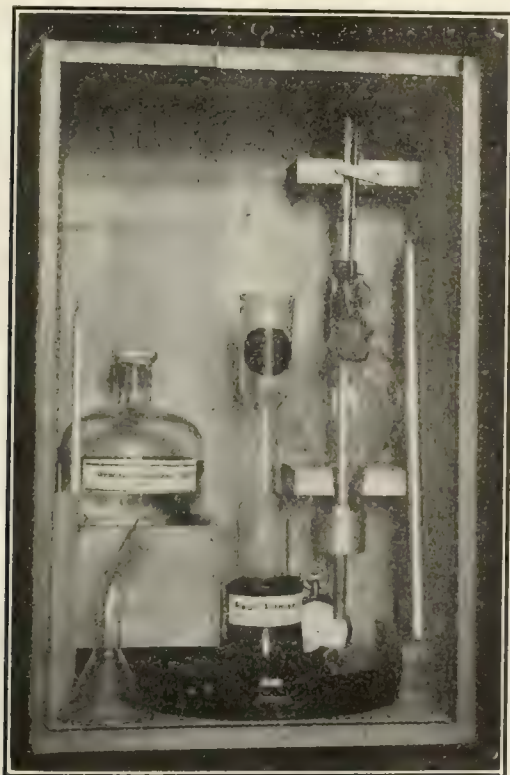


FIG. II.

III. THE SOLVENT.

As a solvent commercial xylene is recommended, because it has a relatively high flashing point of only 21° C., and consequently does not evaporate so rapidly, moreover, it can be obtained everywhere uniformly at a comparatively reasonable price and of good purity. This solvent is required to show: Specific gravity, at 15° C., 0.867-0.869. Boiling point: according to commercial practice and the processes described in all technical analysis books, should range between 135 and 140° C., 90 per cent. distilled off.

IV. THE DISSOLVING VESSEL FOR THE RUBBER.

(a) A small glass vessel of about 1 liter capacity of dark glass, with a screw-threaded metal cover, through which a stirring apparatus operates, such as is frequently used in the household, may be used.

The stirring apparatus should consist of simple, strongly connected, dry and hard wooden strips, or they may be of porcelain or glass, which are easy to clean. This dissolving vessel should always be tared and the tare etched on it.

(b) A liter bottle, of brown glass, with ground in glass stopper and the tare etched on it.

V. THE SOLUTION OF THE SAMPLE.

The solutions for testing should be exactly 3 per cent.

(a) Nine to 15 grammes of the dried rubber sample is weighed out, cut up, and for the first steeping covered with about 100 cubic centimeters of xylene poured over it and allowed to stand until as uniform a solution as possible is effected. Then it is stirred and gradually, according to the nature of the rubber, the solution is made up and completed. The quantity of solution weighed in must be at least 300 to 500 grammes. The gross weight of the dissolving vessel, with the solution must be determined on each occasion before the commencement of the determination of viscosity, so that possible losses of solvent in the finished solution may be replaced and uniformly mixed in again.

(b) The dry rubber is weighed out, then placed at first in a small quantity of xylene and left to steep a short time, for a first steeping. Then gradually, as needed, the remainder of the xylene is added, the vessel closed and the final solution so assisted by occasional vigorous shaking up that it is finally completed in 30 hours.

VI. CONDUCTING THE DETERMINATION OF VISCOSITY.

The glass retort *a*, Fig. 1, the discharge opening being closed, is filled with the solution exactly to the 200 cc. m. mark. For the measuring temperature, 20° C. is always employed. In the older apparatus, the cock was turned from stop to stop; in the newer testing apparatus, the closing rod *d* is raised by a quick, but always steady movement to the stop and at the same time the stop-pin of the stop watch (seconds watch) is pressed open. As soon as the fluid has run as far as the 100 mark down into the lower vessel, the closing rod and stop watch are simultaneously set and the elapsed seconds read off. As so far no unit has been established, it is possible only to give the time required for 100 cubic centimeters of the above described preparation to run out.† The second determination of viscosity is carried out after 8 or 10 days with the remainder of the solution, which must be kept in a dark place.††

VII. CLEANING THE VESSELS.

After running and pouring off the rubber solutions, the vessels are cleaned exclusively by pouring alcohol into them. The rubber is precipitated as a homogeneous mass and can either be washed out in a whole piece, by means of the alcohol, or removed mechanically. The discharge-tubes are freed, by means of a feather brush, from adhering rubber particles. *Acids or alkalies should never be used.* Before undertaking a new experiment, the alcohol must always be completely evaporated and the vessel absolutely dry.

VIII. COMPARATIVE VULCANIZATION EXPERIMENTS.

The residue of the dried rubber film that has not been used to make solution is mixed with 8 to 10 per cent. of sulphur, with no other addition, in the customary manner and pressed or

†It appears to me advisable to use, to commence with, a glycerine of 1.25 (30 degs. Bé.) as the unit fluid, because this can be obtained everywhere of uniformly equal purity. It would thereby become possible, as in oil viscosimeters, to establish really uniform normal values even in the case of minor and unavoidable constructive errors in the apparatus. Furthermore, I would recommend, in order to reduce the working errors as far as possible, to allow not 100 cubic centimeters, but 200 cubic centimeters of the rubber solution to run out.

††The behavior of the solutions, when standing, appears to be characteristic of the conservation of raw rubber. In connection with Dr. Marckwald, I observed that a rapid thinning or a turbidity, or the formation of a solid precipitate, in certain kinds, was an indication of typically low grade varieties. On the other hand, sustained viscosity and the permanent, uniform suspension of non-rubber substances, in the light and in the dark, were characteristics displayed only by rubber varieties which proved good in the course of manufacture and in storage. Concerning this line of experiments there will be more said later.

drawn into a slab which should be as nearly as possible, exactly 5 millimeters thick. In every instance vulcanization should be uniformly accomplished in the press or in the vulcanizing heater so as to obtain results that will be similar to each other. The vulcanization should always be uniformly carried out to ensure either 1 hour at 4 atmospheres or 1 hour at 3 atmospheres.

IX. TESTING THE VULCANIZED SHEET.

a. By determining the total sulphur and the sulphur soluble in acetone, the total volume of sulphur fixed, is determined; the difference is taken as the amount of sulphur fixed by the rubber.

b. Mechanically. For ascertaining the comparative solidity, the German members of the committee recommend the use of the Schopper-Dalen apparatus. The remaining members of the International Commission, in other words, the remaining collaborating colleagues, are at liberty to use other solidity and elasticity testers. It is, however, desirable that the tests be conducted with stamped or cut out rings, having a cross-section of 5 x 4 millimeters. For the comparative mechanical tests, the projection in curve tables, with millimeter subdivisions, carried out as follows, is recommended. In the abscissa, the percentage of stretching should be given, in such manner that each millimeter expresses 5 per cent. of the stretching. The load required to effect the stretching should be shown in the ordinate, in such manner, that each 5 millimeters of the division represents 1 kilo of loading. Where the Schopper-Dalen apparatus is used, reference is made to the particulars given as to this method by Frank, Gummi-Zeitung, XXII, 1908, page 6, Schidrowitz in the *India Rubber Journal* of March to May, 1909, and by Memmler and Schob, Mitteilungen aus dem Königl. Materialprüfungsamt, Gross Lichterfelde, 1909, XXVII, pages 173 and following. Compare also Hinrichsen-Memmler "Der Kautschuk und seine Prüfungen, Teil III, mechanische Prüfungen."

THE ADULTERATION OF RUBBER IN THE BELGIAN CONGO.

THE following is the text of the decree published in relation to the adulteration of rubber in the Belgian Congo in the *Bulletin Officiel Belge*.

First. The placing on sale, the sale and the exportation of adulterated rubber and payments by the assignment of adulterated rubber, are prohibited throughout the territory of the Belgian Congo.

Second. Rubber is qualified as adulterated which, containing foreign substances, presents the appearance of a product superior in value to its actual value.

If it has been coagulated in the form of a pelle or mass, it ceases to be qualified as adulterated after it has been cut through the center, into two parts, approximately equal. This act relating to cutting in half is not retroactive.

Third. Whoever shall expose for sale, sell, offer in payment or export adulterated rubber, shall be punished by at most three months' penal servitude and by fine, not exceeding 500 francs (\$95), or by either of these penalties. The offending substance shall be seized or confiscated.

The accused shall be presumed, until proof to the contrary is furnished, of having acted with fraudulent intent.

Fourth. Infractions of the provisions of this law are to be investigated and confirmed and the seizures made to be carried out by judicial police officers, invested with special authority and by special judicial police officers.

Acting in the latter capacity are customs agents, supervisors of imports and officials and agents designated for this purpose by the

general government, or, in the case of territories constituting a vice-governorship general, by the vice-governor general.

Fifth. The localities where rubber is customarily the object of trade, are subject, during all the time for which they are open to the public, to visits from the officers of the judicial police.

Places of the same character, that are not open to the public, are likewise subject to these visits, but only after sunrise and before sunset.

Sixth. The officers of the judicial police have the right to cut and dissect rubber to determine its composition.

Seventh. Penalties provided for opposition to the exercise by the judicial police of the rights set forth in articles four, five and six.

Eighth. Rubber converted by manufacturing into articles of use and consumption, is not subject to the provisions of this law.

PRETTY GOOD FOR A NON-TECHNICAL OBSERVER.

THE most interesting sight in Marathon, Texas, writes Dr. Charles G. Percival, who is in charge of the Abbot-Detroit car in its 100,000 mile run, was the guayule rubber factory at that place. It is the only factory of its kind in the United States. For more than two years it has been producing rubber and now that the revolution in Mexico has curtailed the supply from that country, it is being worked night and day. There are over six million acres of guayule growing wild in the State of Texas, but a little while ago a shrewd speculator offered the state \$63,000 for all the shrub upon the lands of the state, which offer was quickly accepted by the Land Commissioner. In view of the fact that the shrub has a marketable value of \$100 a ton and that one-half to a quarter of a ton may be gathered from an acre, it can be seen that someone made a barrel of money. The plants easily reproduce themselves if cut off at the roots. The shrub is ground into a powder and then made into a pulp. Water is added and the mixture chemically treated and refined after which heat is applied, with the result that the mixture becomes a thick, rubbery substance which is freed of its woody and resinous components, rolled into thick sheets and cut into sections and oven dried. The guayule rubber lands that cover this part of the state of Texas belong to the same belt that is furnishing the rubber plants in northern Mexico with such an enormous supply of the shrub. This valuable desert vegetation grows on the poorest of land and at an altitude of 4,300 feet and the industry has had a marvelous development in Mexico in the past eight years, but the rebels have destroyed many of the factories and the war has closed the remainder, so that the Texas factory must be depended upon for a great part of the supply during the present war in the republic. Official reports show that over sixty million dollars gold are invested in rubber factories and guayule lands in Mexico and most of this is American capital. Steps are now being taken by the state and others interested to increase the growth of this valuable shrub by scattering seeds and by cuttings.

A MEMORIAL TO THE LATE ROBERT D. EVANS.

The long projected addition to the Boston Museum of Fine Arts has recently been made possible by the donation of the necessary funds for its erection by the widow of Robert D. Evans, the proposed addition, for which plans have been accepted, to be a memorial to her deceased husband. The new building, which will assume the form of a T-shaped addition on the north side, directly back of the rotunda, will be devoted mainly to picture galleries and will constitute a handsome entrance and imposing façade on the Fenway.

THE DEBT OF THE MANUFACTURER TO THE CHEMIST.

BY HERVEY J. SKINNER.*

Presented before the Congress of Technology at the Fiftieth Anniversary of the Granting of the Charter of the Massachusetts Institute of Technology.

THE enormous progress and changes which have taken place in industry and commerce in the course of the past century may to a large extent be justly attributed to the work of chemists.

Such a statement will undoubtedly be regarded by many as a most extraordinary one and open to question, since the proper relation of the chemist to industrial welfare is not generally appreciated.

Let us review for a moment some of the achievements of chemistry so that the truth of the above statement may become more apparent.

The great mechanical developments and the more recent electrical ones depend upon the extraction of the metals from their ores by purely chemical processes. The manufacture of steel, so essential in the construction of our railroads, bridges and large buildings, is a most advanced chemical industry and is under strict chemical control at every step of the process. Alloy and tool steels, which are now finding such extended use in the arts, are the direct result of chemical research. Electrical developments have been almost entirely dependent upon copper, and without the chemical processes of refining this metal it is safe to say that electricity would find very limited application in manufacturing work.

The history of aluminum is another instance of an important metal being extracted from its ores by chemical means. In 1856 aluminum sold for ninety dollars a pound. As a result of improvements in the processes of manufacture, the price gradually dropped to five dollars in 1886, but was still too high to allow of its general use. About this time, Charles M. Hall, then recently graduated from Oberlin College, made a discovery which forms the basis of the present aluminum industry and which brought the price down to a point where the remarkable characteristics of this metal can be utilized in the arts.

In the textile industry, almost every step is dependent upon chemical science. The use of aniline colors, made possible by the discovery of Perkin, has given to the manufacturer more brilliant and more permanent colors for his fabrics and at a lower price than the natural colors previously used. This single discovery has led to the manufacture of over two thousand artificial dyestuffs and has become the foundation of an industry in which it has been estimated that seven hundred and fifty million dollars are invested. It has further given to the producers of coal tar a valuable outlet for a waste product which was not only comparatively useless but difficult of disposal.

Researches in the chemistry of cellulose have given us, among other things, artificial silk and smokeless powder. The latter has already grown to a huge industry within the memory of the youngest of us, and the development of the former bids fair to become equally extensive. The processes of leather manufacture, paper making and many others which could be mentioned, are entirely dependent upon chemical principles. And so we could go on and point out that every manufacturer is dependent in some way or another upon chemical science—and why should it not be so when one considered the true basis of manufacturing?

Manufacturing deals with the modification of material and since all material is subject to chemical laws and its properties are governed by these laws, it becomes apparent that the majority

of the manufacturer's problems are those in applied chemistry.

Unfortunately, the average manufacturer, especially if his process is a mechanical one, regards chemistry as something which has to do with drugs and chemicals and has no direct bearing upon his own problems. That manufacturers fail to appreciate their indebtedness to the chemist and how he can improve the efficiency of their processes by studying the chemical properties of their materials, is due largely to the fact that the older generation of manufacturers started as factory hands and have worked themselves up through the various grades of managements and presidencies. Their methods have been rule-of-thumb methods, and science has had no meaning to them. Their aim was to make money, and the efficiency of their processes was a secondary consideration.

With the growth resulting from the combination of capital and the technically trained men which our universities are turning out, conditions are taking on a new aspect. The larger manufacturers, realizing their debt to the chemist and also that there are still unsolved problems in every factory, are securing the benefits of scientific advice. The smaller manufacturer will soon be forced to the same procedure or he will lose in the struggle for industrial existence. The rule-of-thumb method is passing. Guess work is being replaced by scientific knowledge, and more and more consideration is being given to the underlying principles of the manufacturing processes.

Manufacturing operations based upon chemical processes require control at each step to maintain efficiency. Those based upon mechanical processes but still dependent upon "material" demand rigid inspection and control of every material entering into or affecting the cost of the finished product.

All this is the work of the chemist or the testing engineer. It should be his duty to see that every material is purchased on a basis of quality and not of brand, that the finished product meets the proper requirements, and that the yields are as near theoretical as possible.

A laboratory is just as essential to a factory as is an office, and the chemist is just as necessary as the auditor. The records of manufacturing concerns using scientific knowledge will bear out this statement. One mistake common to both the manufacturer and the chemist themselves should be pointed out.

Many manufacturers, having been converted to the idea that a chemist can be of assistance in the operation of their plants, oftentimes will employ a recent technical graduate and expect him to solve any question in chemistry. This is an injustice to the young chemist and to the profession itself.

Alan A. Claffin in a recent article has said:

"The employment of a scientific man does not mean the engaging of a recent technical graduate at a salary of fifteen to twenty dollars a week to test raw materials and report results, which are probably erroneous, to a foreman who does not understand them, but it means having a man of mature experience as a chemical adviser, with two or three recent graduates as working assistants."

No words could be truer or better expressed. The manufacturer does not hire a bookkeeper without actual experience to keep his accounts, neither does he engage a lawyer just out of law school to look after his legal affairs. Then why should he expect the young graduate, with a large amount of theoretical knowledge and with limited experience, to be able to solve effectively the problems which have been troubling him for years?

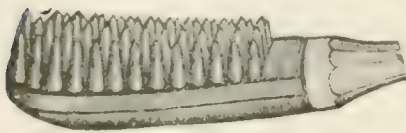
This condition of affairs is really a serious one and has much to do with the attitude which the average manufacturer takes toward the chemist. It also accounts for the diffidence of the manufacturer in applying chemical science to his problems, and not until the true relation between the chemist and material is more fully realized will the real debt of the manufacturer to the chemist become appreciated.

*The author of this article is the son of the late Thomas F. Skinner, who for many years was treasurer of the Stoughton Rubber Co., and one of the founders of the New England Rubber Club.

New Rubber Goods in the Market.

A RUBBER TOOTH BRUSH THAT IS SANITARY.

THE bristle tooth brush in common use is neither a sanitary device, nor one that is agreeable to use. It speedily becomes dirty and rancid, and, if the bristles are displaced is capable of causing more than discomfort to the user; a tooth



THE "RUBERO" TOOTH BRUSH.

brush that is shedding its bristles is about the most objectionable toilet device imaginable. No such defects are possible in connection with the "Rubero" tooth brush, shown in

the accompanying illustration, in which the bristles are replaced with points made of rubber. It is claimed that the velvety smoothness of these points produces a pleasant sensation, they can never wound the gums, and are so shaped as to find their way into all the crevices and interstices of the teeth, the result being perfect cleanliness, without injury to gums or teeth [Bowers Rubber Works, San Francisco, California.]

A RUBBER DISH CLEANER.

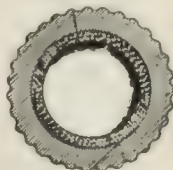
THE housewife's dislike of dish-washing is proverbial not so much perhaps on account of the laborious character of the task as by reason of its unpleasant nature. Most, if not all of the unpleasantness is obviated by the use of a simple little device,



appropriately designated "The Kitchen Kumfort," in which rubber is the operative factor. As will be seen from the accompanying illustration it is a simple, rubber bladed scraper, the rubber of which is specially prepared to resist the effects of grease, hot water, etc. It removes grease and food remnants from plates, dishes, pans, etc., quickly and cleanly without the disagreeable results to the hands and without noise or clatter, the water being at the same time kept to a great extent free from grease and food remnants, will not scratch the most delicate ware, and practically cleans the dish before it is immersed in the water. It is also well adapted for use as a sink-cleaner and is mounted in dozens on a display card for sale. [Lasher Manufacturing Co., Davenport, Ia.]

A GLASS AND RUBBER BALL.

IT IS A BIT of a shock to think of a baseball, or is it a golf ball? with a centre that is a hollow glass sphere. That is what George L. Harvey, of Chicago, has invented, and by the way, has assigned one-half of his interest in it to Francis L. Richards, of



RUBBER BALL WITH GLASS CENTER.

Hartford, well known as an inventor of golf and other playing balls. The glass shell is enclosed with a wrapping of rubber bands and an outer composite cover.

A RUBBER POCKET CUSPIDOR.

SOME people are particular about what they have in their pockets, and some are not. Others, even if they are particular are obliged to carry articles and appliances which they only

produce under cover. A pocket cuspidor has its advantages, but it will hardly enter into competition with the sawdust-filled receptacle of the virile and accurate tobacco chewer. The article under consideration is equipped with a rubber cap that closes tight when it is not in use. It is ingenious and doubtless in the case of traveling consumptives, necessary and sanitary. The inventors have shown much skill in its production, and we trust that it will come up to their expectations. [Manufactured by the Oregon Rubber Co., Portland, Oregon.]

WEAREVER OVAL RUBBER SPONGES.

It would almost seem as if the last word had been said of rubber sponges were it not for the improvement shown in the

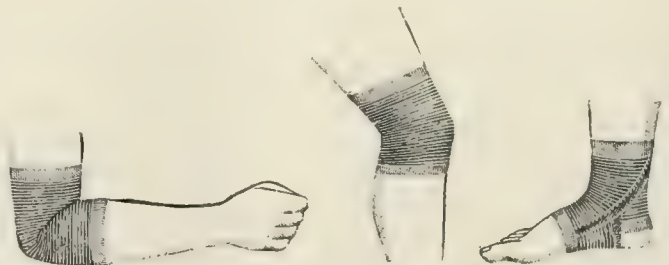


WEAREVER OVAL RUBBER SPONGES.

"Wearever" goods. The oval shape, for example, allows a sponge perfectly to fit the hollow of the hand and is very convenient. A further improvement is in the minute and even sponginess of the article, which makes it resilient and durable to a high degree. The goods are exceedingly light in weight, are made in five different sizes, and of the popular red color. [Manufactured by The Faultless Rubber Co., Ashland, Ohio.]

ELASTIC BANDAGES FOR BICYCLISTS.

ELASTIC bandages at one time were used only for those who, through advanced age or sudden strain, had developed varicose veins. Of late, however, trainers have put them upon athletes with excellent results. A further and very practical use is for

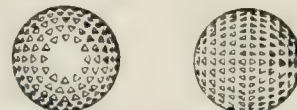


ELASTIC BANDAGES FOR BICYCLISTS.

bicyclists. For wrist, ankle, elbow and knee, in other words, where a constant tiring strain is likely to occur, the elastic bandage is applied with great benefit. A full equipment, as indicated above, known as the "Bike" line, is being marketed by Sharp & Smith, No. 103 North Wabash avenue, Chicago, Ill.

NEW DESIGN FOR A GOLF BALL.

A NEW design for the surface marking of a golf ball is shown in the accompanying illustration. The design is patented by

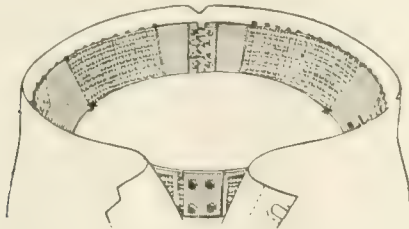


NEW DESIGN FOR A GOLF BALL.

William Pearce, of Akron, Ohio, and assigned to The B. F. Goodrich Co., makers of the Haskell golf ball.

ANOTHER USE FOR RUBBER THREAD.

To do away with the necessity for suspenders, without either the feeling of insecurity inseparable from their absence, or the inconvenience of the belt pulled tight enough to furnish their support, is certainly an achievement that merits more than passing mention, with the vestless season near at hand.

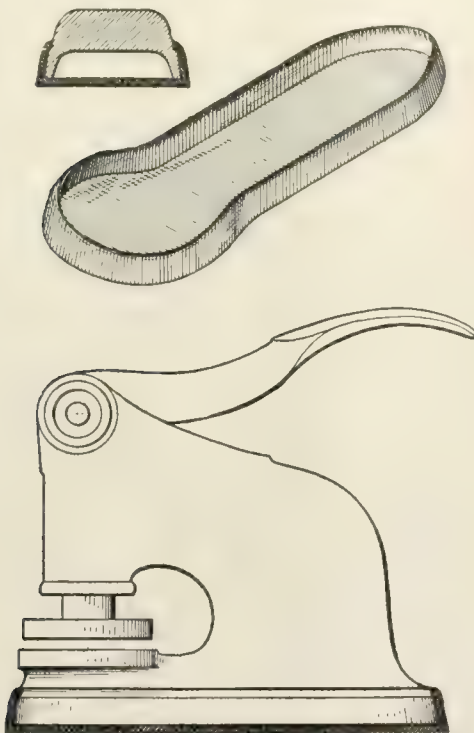


THE "HIPFIT" TROUSERS SUPPORTER.

The device illustrated herewith is made of light gauze, with silk elastic over hips and back, it is made to conform to every movement of the body and supports the trousers evenly all round, no matter what position the wearer may assume. At the same time it prevents the shirt from working up. [Hip-Fit Manufacturing Co., 60 Grand street, New York.]

A RUBBER CUSHION FOR SEAL PRESSES.

THE jar and noise, inseparable from the use of an uncushioned seal press, becomes burdensome where this device is employed frequently and vigorously, to say nothing of the effect on the table or desk on which it stands. Noise, jar and damage to furniture are alike prevented by the use of the seal press rubber

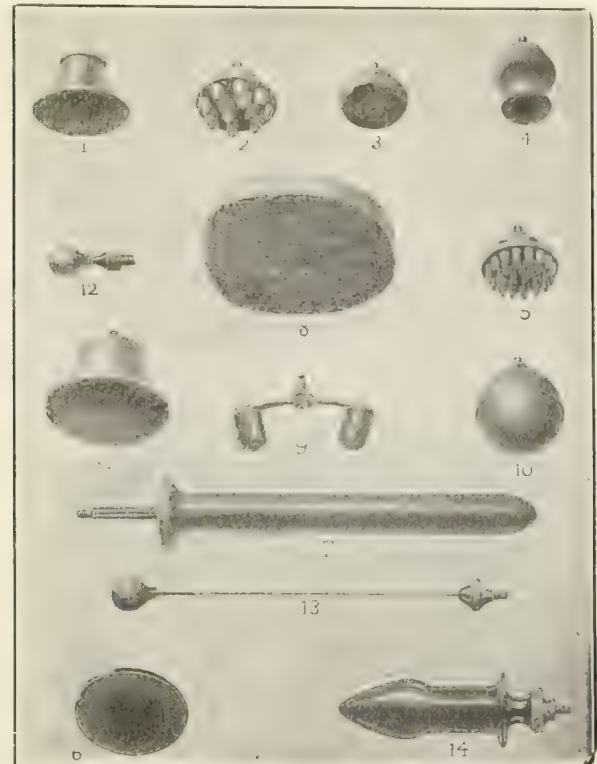


RUBBER CUSHION FOR SEAL PRESSES.

cushion illustrated herewith. It is stretched to attach over the base of the press, covering it completely, thus absorbing all shocks when the machine is in use. The accompanying illustrations plainly show its form and the method of its application. [Art Novelty Manufacturing Co., Kansas City, Missouri.]

RUBBER AS AN AID TO MECHANICAL MASSAGE.

VIBRATORY massage, effected by mechanical, commonly by electrical means, is a modern addition to therapeutics of recognized merit. The "Rex" vibrator is one of the devices extensively employed for this system of treatment, and in connection with the apparatus a series of "applicators" are employed, which, as being made from rubber, will doubtless prove of interest to our readers. The full line, seen in the accompanying illustration, shows a complete outfit for every kind of vibratory treatment required by physicians, professional masseurs, barbers, and for home use. Each of the devices has its special function, No. 1 being a medium soft rubber cup applicator; No. 2, twelve-prong rubber-tooth scalp applicator; No. 3, hard rubber ball



"REX" RUBBER APPLICATORS.

applicator; No. 4, small soft rubber cup applicator; No. 5, thirty-one prong rubber brush applicator; No. 6, two-inch flat hard rubber disc applicator; No. 7, special soft rubber rectal and vaginal applicator; No. 8, large sponge applicator; No. 9, special twin spinal applicator; No. 10, pneumatic ball applicator; No. 11, large soft rubber vacuum cup applicator; No. 12, small soft rubber ball eye, ear and nose applicator; No. 13, combination urethral and vaginal applicator; No. 14, hard rubber rectal dilator. The increasing use of the vibratory massage apparatus and the constant addition to the number of diseases for which this form of treatment is considered beneficial, indicates the increased use of rubber for the manufacture of these devices.

WATERPROOF WINGS FOR FLYING MACHINES.

ONE of the most serious dangers to which the aviator using an aeroplane is exposed at high elevations, is due to the effect on the fabric of which his planes are composed, of the moisture encountered in cloud banks, fogs, etc., through which he may be compelled to pass. Under the influence of the soaking the fabric receives, the planes or wings lose their rigidity, and by collapsing cause a disastrous ending to the flight. The Goodyear Tire and Rubber Co. seek to eliminate this source of danger by the manufacture of a rubber coated and permanently waterproof fabric for the planes.

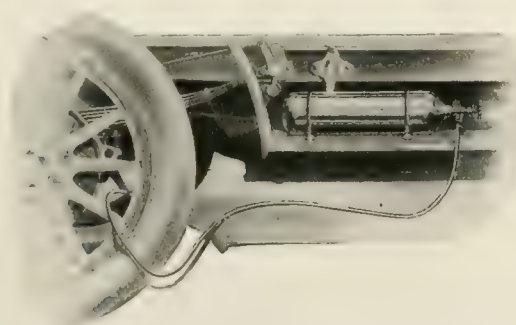
INFLATION OF TIRES WITH CARBONIC GAS.

THE UNIFORM and adequate inflation of pneumatic tires adds so materially to their life that any device by means of which this is facilitated, should interest alike the automobilist and the manufacturer of rubber tires, whose reputation and business must be benefited by the increased durability of his product. Automobilists have been using, for the past five years, a device for the inflation of tires with carbonic gas, of which illustrations



are presented herewith. One shows the "Baby" tire inflator, connected with the tire, for the purpose of inflating; the other, the "Improved Baby," which is equipped with a special regulator, for controlling the pressure of gas and a gauge that records the pressure and ensures its perfect control. The tank, which is attached to the foot board, contains the gas liquified under tremendous pressure, opening the valve permits of its immediate re-assumption of the gaseous form, accompanied by the development of approximately the pressure required for its liquefaction. The tanks hold about four pounds of the liquefied gas and about three ounces of this will expand into sufficient gas to fill a

completely deflated tire to 70 pounds pressure; consequently, a tank will fill over 20 tires from complete deflation without any effort on the part of the owner or effect about 100 ordinary pumpings up, all that is necessary being to connect the hose with



TIRE INFLATION WITH CARBONIC GAS.

the tire valve and turn on the gas. It is claimed that owing to the fact that the gas contains no free oxygen, its action on the rubber substance is distinctly preservative and as it is the most

THE ALLEN TIRE PRESSURE GAGE.

BEARING in mind the importance attached by tire manufacturers to the proper inflation of tires, many automobilists carry a tire pressure gage as part of their outfit. A convenient device of this character is the Allen Tire Pressure Gage we illustrate.

The gage is pressed on the valve stem, after the dust and valve caps have been removed, the rubber washer in its end fitting air tight to the rim of the valve and the valve plunger being, at the same time, pressed open, so that the air is admitted to the gage. Acting on a plunger, controlled by an accurate spring tension, which is forced up against the spring pressure, the air pressure is registered by the sliding band that encircles the gage on the outside. When the gage is removed from the valve, this band retains its position, so that the gage may be taken away for convenient reading, without affecting the registration.

The gage is made of substantial brass tubing and nicked and being but $4\frac{1}{2} \times \frac{1}{2}$ inches, can readily be carried in the vest pocket. [The Allen Auto Specialty Co., No. 1926 Broadway, New York.]

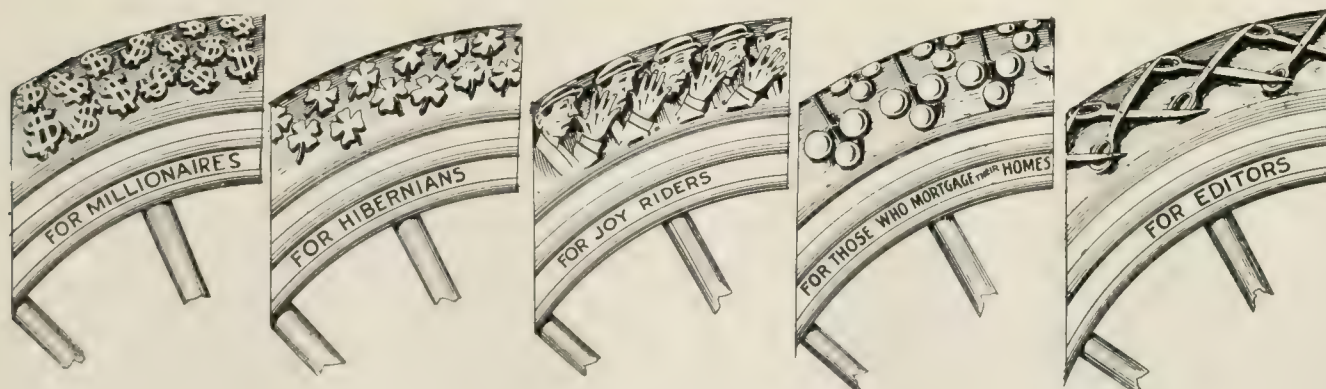


THE "STAR" NON-SKID TIRE.

THE STAR NON-SKID is a type of tire for the prevention of skidding, the merit of which lies in the fact that it presents an infinite number of angles to the course surface. The tread is closely covered with stars and every star has ten angles. The stars stand out strongly from the tread and it is claimed that a wheel equipped with one of these tires is proof against skidding. [Star Rubber Co., Akron, Ohio.]

DEVELOPMENTS IN RUBBER ANTI-SKIDS.

THE Bailey "Won't Slip" was doubtless the pioneer all-rubber anti-skid, and for a long time its lozenge shaped protuberances were the only decorations that auto tires wore. After a while, however, inventive geniuses began to evolve other styles until there was the "nobby" tread, the "staggard" tread, and a host of others. Almost every geometric figure possible was employed in relief on the tread surface. Some were useful, others not; a few were decorative; all were interesting in that they showed thought on the part of the manufacturers. They also made work for the mold makers. There was, however, running through all of those designs a sameness that pointed to imitateness rather than originality. After waiting long,



SUGGESTIONS FOR TIRE TREADS.

effective fire extinguisher known to science, quenching almost instantly a stubborn gasoline flame, its usefulness is manifold. [The Liquid Carbonic Co., Chicago.]

and in vain, for some genuine artist to rise up and prove his preëminence, a few designs are herewith submitted in the hope that it will stimulate renewed activity in tire tread decoration.

Recent Developments in Rubber Deresination.

BY H. O. CHUTE, CH. E.

IN the June issue of this journal there is a reference by your English correspondent to an article on deresination found in the February and March issues of *Le Caoutchouc et la Gutta Percha*, by A. Chaplet and H. Rousset. A review of that article is here given, but attention is called to a series of articles on deresination by the writer which appeared in the May, June and July issues of THE INDIA RUBBER WORLD for 1909. As these articles covered many of the subjects of the article under review they will be compared with the statements of the foreign authors.

The articles begin in the February 15 issue of *Le Caoutchouc et la Gutta Percha*, and the authors there point out that resins of various kinds are always associated with crude rubbers, and some tables and analyses of the amounts of resins are given, showing a wide range of resin contents, from 2 per cent. or 3 per cent. in Pará to 46.9 per cent. in Borneo.

It is stated, however, that with more than 2 per cent. or 3 per cent. of resin it becomes impossible to conveniently work the rubbers. Of course it is well known that in the United States rubbers are habitually worked with far greater resin contents without difficulty.

The resins are said to produce cracks and render the product heterogeneous. The statement is made on the authority of Hanriot (*Revue Générale des Sciences*, 1909), that while Pará, Ceylon Pará and *Maniçoba* rubbers contain only a small percentage of resin, some pasty and sticky rubbers like Palembang, Sumatra Jelutong and Flake Accra contain resin in quantity ranging from 80 per cent. to 100 per cent. of the dry substance, and some contain 50 per cent. water. This is pretty well known. A table of the optical indices of the rubber resins is given, but it does not seem important or new.

Dead Borneo or Jelutong is said to contain from 10 per cent. to 20 per cent. of rubber, which can be extracted, of good quality. It is remarked that the resin contents of various rubbers from the same province show wide variations, no doubt due to the different methods of preparation of the latex.

A table is given showing one sample of crude Pará with 63 per cent. rubber, 2.1 per cent. resin and 34.6 per cent. insoluble. No rubbers are mentioned as containing more than 10 per cent. resin except a New Guinea sample with 20 per cent. and Dead Borneo with 46.9 per cent. resin.

A discussion of the nature of resins is entered into, but it is stated that little is known of them. A table of the saponification values of the resins states that the resin of Pará is 15 per cent. non-saponifiable; while Congo is 56.6 per cent., Ceylon 20.8 per cent., guayule 78.2 per cent., and Dead Borneo 100 per cent. or totally unsaponifiable.

Resin solvents are discussed with the general conclusion that acetone is the best, for it dissolves some things out of rubber that alcohol will not touch, besides it will dissolve a larger quantity.

Pyridine is stated to be a resin solvent but not a rubber solvent, and soda and potash have been employed in large quantities.

Mixed solvents, one of which is a rubber solvent and the other a resin solvent which precipitates the rubber, are also discussed and methods employing them shown, but it is concluded that any solution of the rubber breaks up the complex structure and weakens it or destroys the "nerve," and therefore solvents which attack the resins only, give the best product. The rubbers from mixed solvents were more soft and sticky. Moreover, oils or rubber solvents will not attack rubber till quite dry, while acetone will first take out the water and then remove the resin.

In concluding the first article the authors say: "It is established practically that when rubber is well deresinated it is of excellent quality. Marckwald Bros., and Liebschutz (*Gummi Zeitung*, 1907) made a series of trials of rubbers before and after deresination (made in the works of the Rheinische Gummi Werke), and concluded that the special smell of the crude gum disappeared, that the rubber thus treated was not sticky and in consequence it was easier to mix; in fine, that the resistance increased 50 per cent. or more."

The subject is continued in the issue of March 15 of the journal, and under the head of "Industrial Proceedings" there are given outlines of a number of processes. These may be divided as follows:

First—Those which depend on the action of an alkali on the resins for purification.

Second—Those which use a mixed solvent which at high temperatures is a solvent for rubber, but at lower temperatures attacks preferably the resin.

Third—Those processes which use a rubber solvent for dissolving both rubber and resin and then precipitate out the resin by use of another resin solvent which will separate the rubber.

Fourth—Those which use a solvent for resin only without at any time dissolving or affecting the rubber.

Fifth—Those processes which first extract resin then later extract the rubber from woody matter such as guayule by naphtha.

Sixth—Those which use a rubber solvent in limited quantity to swell the rubber only and then extract with a resin solvent.

Seventh—Those which have some special mechanical devices for stirring or holding or treating the rubber.

There are no examples given of the first class except it is noted that lately it was found that a washing with alkali after deresination removed some albuminoids and oxydases which would otherwise turn it black and oxydize it.

As the type of the second method is cited the English patent to Combanaire et de la Fresnaye No. 22,758 of 1901. This is particularly suitable for gutta, and the picture shows a rather crude extraction apparatus with petroleum naphtha which at certain heats dissolves gutta resins.

The French patent No. 375,118 to Société Belge. de Raffinage du Caoutchouc heats solvent to 60° C.

Wildman, in French patent No. 366,704, found that if rubber was dissolved in a solvent like chloroform at 60° C., and alcohol little by little was added, that rubbers of different qualities and values were precipitated at different times.

As the third type there is cited the German patent to Gratz, February, 1906, where the mass is treated with benzine, turpentine, carbon bisulphide or gasoline. This dissolves the rubber; they then add methyl, ethyl or amyl alcohol and precipitate the rubber and the alcohols dissolve the resins.

For very poor rubbers like pontianak, Dybowski (*Procédé de l'Asia Caoutchouc Co.*) recommends ether and carbon bisulphide, then a treatment with acetone or alcohol. The rubber granulates at end of the work and thus separates itself from the alcohol which is not lost, there being no cavities in the rubber.

As an example of the fourth type the French patent to Grak, No. 363,340 (1908), is cited as using aniline to dissolve the resins only, without affecting the rubber.

As an example of the fifth class there is cited the French patent to Foelsing, No. 368,958 (1906), wherein only acetone is used to dissolve resins without dissolving the rubber. This is said to produce refined rubber with better "nerve" than when the rubber

is extracted with benzine. As this necessitates that the rubber be dissolved it has not much "nerve," but the process is suitable for use with guayule or similar rubber plants.

As examples of the sixth class, where only enough naphtha or rubber solvent is used to swell the rubber, there are cited the French patent to Worms and Flamant, No. 382,571 (1907), who use a mixed solvent with enough alcohol to keep the rubber from solution. The mixing must be according to one's experience. There is also shown an apparatus patented by the Caoutchouc Co., with a mixer and two tanks above; one contains the gelatinous rubber and the other the solvent. The mixer is connected to a still and to a vacuum pump separately. The description is poor and the apparatus is inoperative as pictured.

As an interesting innovation the French patent, No. 404,307 (1909), of the Caoutchouc Co. is mentioned as treating with a little benzine to soften and swell the rubber and make it gelatinous but not dissolve it; presumably acetone was then used for extracting resins.

Joly (Belgian patent No. 213,772, 1909) uses tar oil for softening the rubber.

As examples of special mechanical apparatus used for mixing, etc., are cited the French patent, No. 390,330, of July 1908, and the apparatus of Worms and Flamant which has shelves to put the rubber on.

The German patent to von Stechow (1908) shows shelves also to keep the rubber sheets apart.

Only a hasty summary of the above processes is given, for, in the articles which appeared in THE INDIA RUBBER WORLD in June, 1909, there was described, as an example of the first process as above, the patent to Austin Day, issued in 1859. He used alkali to purify crude rubbers.

As an example of the second process, there was cited the patent to Wilmonski of 1901, who used naphtha at 60° C. for treating gutta.

The Lawrence patent covers the third, sixth and seventh methods, for he uses alcohol for purifying guayule which had previously been extracted from the wood with naphtha, and thus gets the mixed solvent, and has a mixing pan for extracting and various tanks to store different solvents.

As an example of the fourth process, attention is called to United States patent No. 820,216, as illustrated and described in this journal in the article referred to. This shows an extraction plant consisting of a series of extraction vessels through which the solvent flows in series to saturate itself before it is redistilled and recovered.

The special solvents recommended are the acetic esters of the alcohols, particularly methyl acetate and ethyl acetate, with a protective solvent such as alcohol or acetone. These are better solvents than acetone alone and do not dissolve the gum.

The same article gives estimates of the cost of extraction and states that a recovery of 99 per cent. of the solvent may be obtained at each treatment.

The sixth process, or the use of rubber solvents in sufficient quantity to only swell it or make it gelatinous, has been in constant use in the United States on a large scale at one plant at least for six years, and now several plants are using this modification. This was the first process to be worked in the United States on a considerable scale.

The seventh process, or the use of shelves for holding thin sheets of rubber while deresinating has been tried several times in the United States. But when the rubber is softened by heat in the deresination it will not retain its shape, and therefore this expedient has been discarded in favor of a mixing device such as those shown in the patents to Hood, Lawrence and Eves, as quoted.

The fifth process is only suitable for those places where guayule grows.

We may therefore conclude that if the authors of the article under review have given all that is known of the European art as it now exists, it may be assumed that the United States has made more technical progress and now leads in this industry.

The authors conclude with the following remarks, which are applicable to the American situation as well as that in Europe:

"Botanists and explorers are year by year discovering new plants with a latex containing more or less rubber—usually less—and deresination would make these into useful rubbers. Mixing, like solution, may alter rubber, but by proper treatment resins are removed and 'nervy' rubber is left of excellent quality.

"Unfortunately this new art is difficult to study, as only a few specialists have a knowledge of it and are exploiting it for their own remuneration. There are also many secrets—pseudo secrets—never told or published even in patents. These secrets or mysteries are considered necessary. Usually, the "secret" consists in merely following out well-known plans, or, in some cases, in using processes patented by others. In other cases mysteries are made of the process used for fear that others will copy it.

"The deresination industry is like the plants which grow in the shade. Some buy cheap products and sell the purified rubber as a natural product. We know a factory which closely counterfeits all marks and moulds of the natural rubbers. This ruse is not novel; Gutenberg sold his first printed copies of the Bible as manuscripts. Thus one might suppose that the industry of deresination did not exist or was only in an embryonic stage. This is not true; it has existed for some years. Many works are deresinating large and important stocks of rubber, but they say nothing of it."

The authors give as the necessary steps of deresination the following operations:

First—Washing or mastication.

Second—Drying by a water solvent, as Pyridine. (Acetone is better.)

Third—Mixing and heating to assist the true resin extracting operation.

Fourth—The recovery of the solvents used.

A supplementary note states that it has been found that after the resins are extracted a treatment with soda or other alkali is beneficial in that it removes albuminoids and oxydases which would otherwise render the extracted product in time black and oxydize it.

JERSEY EMPLOYERS LIABILITY ACT.

On the Fourth of July a new liability act will go in force in New Jersey which is a bit revolutionary. For example—it shifts the burden of proof of contributory negligence to the shoulders of the employers. It also establishes definitely, compensation for slight injuries such as have not in the past been reported. Some of the points are that the negligence of a fellow employee, or the fact that the injured person assumed risk incidental to the employment, make no difference, nor does the fact of a contract for the employment release the employer from liability. The amount in the event of accident is very definitely stated. For the loss of a thumb it is 50 per cent. of the daily wages during 60 weeks; for the loss of a third finger, 50 per cent. of the daily wages during 20 weeks. The loss of a phalange of thumb or finger is reckoned to be equal to the loss of half of such member. Loss of toe, foot, hand, leg, arm, etc., are specifically provided for. The law also provides for compensation to widows; in fact, nearly all relations backward and forward for three generations.

Notices are posted in all of the rubber factories and work shops throughout Jersey, and both employers and employees are studying them very diligently.

It is interesting to note that an act similar to this was recently declared unconstitutional in the state of New York.

FOREIGN MARKETS FOR RUBBER TIRES.

THE widespread use of the automobile in England, not only as a pleasure vehicle, but, to an increasing extent, for commercial purposes, makes that country a fertile field for the tire manufacturer and a great and steadily-growing business is being done there in pneumatic and solid tires. As a fact, however, it is mainly tires of domestic manufacture, with a few of French, German and other makes, that are sold. The foreign tire, to gain a foothold, must be marketed in a very thorough and practical manner, by the establishment, preferably in London, of a central depot or headquarters, carrying a large stock, with branches in the most important trade and motoring centers. The stock carried at the main depot must be of such quality and variety as to facilitate the prompt execution of orders from the branches, not a difficult matter when the excellent transportation arrangements in Great Britain are considered. At the head of the establishment should be a thoroughly competent "tire man," who is, at the same time, a "hustler" in business.

From Manchester, the center of the British rubber manufacturing industry, the United States consul reports American tires on the market and, in spite of keen competition, meeting with a fair measure of success. There being no depot in Manchester, orders must be filled from the London office. The consul considers judicious advertising an important factor in obtaining a share of the trade and expresses the opinion that with an experienced outside selling force, familiar with local conditions, operating from a central depot in London or Manchester, and such branch stores in other cities as the trade may require, American manufacturers could obtain a remunerative share in the British tire business. Factors in their favor are the activity and success with which American makers of automobiles are exploiting the British market, which naturally creates a demand for American tires, the greatly-increased employment of commercial automobiles, motor-buses, etc., in which the tires are so important an element, and the growing number and increasing popularity in all the large cities of the taxicab.

From Belfast, Ireland, the United States consul reports a good opinion prevalent as to the durability of American tires, which he states would find a much larger sale if they were made by the manufacturers to conform to the metric system of measurements, so generally used, in place of the inch scale. Here, again, the indispensability of a central agency with a large stock and convenient distributing branches, is urged, the fact that the largest garage establishment in Belfast has announced a willingness to accept a sub-agency for a first-class American tire for that locality, indicating the favor in which they are held.

The United States consul in Edinburgh, Scotland, advises the placing of the goods in the hands of the best local agents or "factors," and the granting to them, of terms as liberal as those the British houses offer, and the judicious expenditure of as large a sum in advertising as may be warranted.

According to a report of the United States consul, at Erfurt, Prussia, rubber tire manufacturers sell direct to motor car and other vehicle factories in his district. They also do a large business with the dealers in automobiles, bicycles and their accessories. Some of the smaller bicycle factories purchase tires from the wholesale dealers.

The method of doing business through a central house, with local branches, as described above, is followed in Germany, with considerable success, by a French tire manufacturing house. The consul suggests the supply of sample tires to the agents, to be tried, free of cost, by prospective purchasers and compared with other makes.

That there is much business to be done, and that American manufacturers who will take the trouble to study the markets, can, owing to the excellence of their goods, secure a fair share of it, seems to be the almost unanimous opinion of the consular officers, who have studied the situation and reported on it.

TIRE AND WHEEL STANDARDIZATION.

THE Committee on Wheel Dimensions, appointed by the Society of Automobile Engineers, to consider the standardization of automobile tires and wheels, made notable progress, when it recently presented a tentative report standardizing felloe, band and tire dimensions for solid tires and recommending a demand for a permanent metal band, complying with the recognized standards, on all wheels sent out by wheel manufacturers.

The specifications embodied in the report call for a metal band a quarter of an inch thick on wheels for single tire equipment, up to and including four inch nominal width of tire and three-eighths of an inch thick on wheels for single tire equipment above four inch nominal width of tire and three-eighths of an inch thick on wheels for dual equipment of all tire sizes.

A constant wheel diameter, over the metal band, for all widths of solid tires, of a given nominal overall diameter, is provided for in the report, which also prescribes that nominal tire diameters shall increase or decrease above or below 36 inches, in even two-inch differences. Width and depth of felloes and width of band are also provided for, the width of felloe and band being fixed at three-quarters of an inch less than the nominal width of the tire equipment for same; thus the standard width for four-inch single tire equipment would be three and a quarter inches. For dual equipment the width of felloe and band shall be twice the nominal width of each of the dual tires, so that the standard felloe width for four-inch dual equipment shall be eight inches.

The minimum depth of wood felloes for different tire sizes is set forth in a table, in which the depth of felloes for tires from 2- to 8-inch sizes is presented in half-inch differences. The tolerance over metal band is also provided for, the tolerance allowable in the circumference of metal bands being fixed at plus 1/16 inch before application to wheel and plus 1/8 inch after application.

All the provisions for non-demountable tire equipment standards were also made to apply to demountable tire equipment.

The National Association of Automobile Manufacturers has endorsed the work of the Society of Automobile Engineers and expressed its approval of the pending adjustment of the solid tire question. It has also urged its members to be prepared to adopt such standards not later than July 1, 1911, and to put them into effect not later than January 1, 1912, recommending that tire and wheel manufacturers make preparations to the same effect.

The rapidity with which the committee has surmounted the apparently difficult obstacles with which it was confronted and arrived at a practicable decision, is very gratifying and indicates that the work it has accomplished will meet with equally prompt approval from and be of the greatest future value to all who are in any way interested, as manufacturers of, dealers in or users of commercial automobiles. The willingness evinced by all makers of truck tires to co-operate with the committee in solving this important problem and their appointment of competent representatives to take part with the committee in its deliberations is the best evidence of their realization of the importance to the future of the commercial motor vehicle, of tire and wheel standardization. That it will shortly become an accomplished fact, in spite of the heavy first expense entailed for the alteration of moulds, etc., appears reasonably certain, and there is no factor that will have a more important effect on the general adoption of the commercial auto and on the hastening of the day when for most heavy draught purposes the horse will have become a thing of the past, and when the greatest single use of rubber will be for the manufacture of solid tires.

RUBBER ROLLS OF MANY SORTS.

THE use of rubber-covered rolls has long been an important factor in almost all trades, new uses being constantly found for them. Long ago they displaced rolls formerly covered with leather, felt and other substances. For gripping and feed rolls, rubber is the standard covering everywhere, owing to the frictional surface that it gives. It also finds a considerable use as a substitute for cog wheels in transmitting light power. The same principle is familiar to all in the rubber tire, which is really a rubber roll, and which transmits power to the ground. Owing to reduplicated friction, one rubber-covered roll will transmit its power to another much more efficiently than to the ground. There are many kinds of light machinery in which counter-working rubber wheels could be used, thereby doing away with the necessity of a separate clutch.

While the ordinary rubber tire is but one form of rubber roll, it has won such prominence as to eclipse all other forms put together, and now forms a class by itself. Under rubber rolls should come every rubber-covered wheel which runs upon the floor or ground, including roller skates, table leg castors and the like.

Among power rolls, the largest use is in paper and leather working machines. They are also extensively used to wring or squeeze the water out of various materials, such as cloth in bleacheries, dye and print works, cotton, woolen, felt and shoddy mills, in making oiled clothing and in wool scouring. In glucose and sugar factories, the sugar sacks and blankets, through which the syrup is strained, are steeped in water and run through power wringers, to save the sugar that is in them. In tobacco factories the leaves, after being steeped in the flavoring syrups, are run through wringers to remove the excess of liquor. During the last two or three years, rubber rolls have rapidly supplanted leather rolls in lithographic work, with several distinct advantages in their favor. The rolls are perfectly true, less color is used, and much time is saved in washing up. The use of rubber inking rollers is being extended to various other kinds of printing, such as stamping tin and sheet iron. Other uses are arising day by day, rolls for such purposes being made to order. In fact, except in clothes wringers and typewriter rolls, most of the business in mechanical rolls is done to special order, because of the lack of standardization in most rubber roll using machines.

The clothes wringer, which depends upon rubber rolls, is an American industry from first to last, having developed from small beginnings some fifty years ago. Nowadays the larger part of the business is done by the American Wringer Co. Their output is some 6,000 rolls a day, with a capacity of 10,000. The company have made their own rolls for some fifteen years, and their rubber factory is quite extensive.

The greatest problem met with in the making of rubber rolls has been to secure such adhesion to the shaft, that the rubber will not twist off under the severe strain to which they are subjected. Mr. George H. Hood originated, or rather revived, the method of vulcanizing rubber to iron, through the medium of copper plating, which combined with the sulphur during vulcanization, thus securing perfect adhesion between the two bodies. He applied this method of fastening to both rubber rolls and rubber tires, which, as we have shown, present similar characteristics and problems. Hood's method is still used, in a modified way. Instead of copper plating the shaft, on which the rubber is to be built up, it is first painted with metallic salts which accomplishes the same purpose in securing adhesion of the rubber to the iron. The sheet rubber is then wrapped around the shaft to the desired thickness, the first wrapping being a sheet of hard curing rubber. Sometimes there are three different layers of rubber, hard at the shaft, then a layer of semi-vulcanite, with the outer layer of soft rubber.

This method is troublesome, but it adds greatly to the life of the roll.

When the whole shaft has been built up to the desired thickness it is wrapped, vulcanized and ground true on a lathe. Molds are not much used now, better results being obtained by wrapping and curing the built-up roll. It was formerly the custom to cure the roll on a mandrel. The shaft was then painted with rubber solution, wrapped with twine, solutioned again, and the rubber tube forced over the shaft. This method has been entirely superseded by the one described above.

In a former issue of THE INDIA RUBBER WORLD there was described a much cheaper method of making wringer rolls. The rubber cover is spewed out of a tubing machine to any length desired, of smaller diameter than the shaft or rod. The rod is then heated and forced through the tube, the heat in the rod causing the rubber to vulcanize so firmly to the iron that it cannot be torn loose. If the heat from the rod does not continue long enough to get the best results, it might be kept warm by means of an electric current.

The typewriter uses considerable rubber, though far less than the wringer. All typewriters have rubber feed rolls, and most have a rubber-covered platen, against which the type strike. It was this platen, the patent for which was owned by the Remington Co., that first made the typewriter a commercial proposition. It was formerly made much larger and of almost solid rubber; but it is now only a hollow wooden core, with a skin of rubber about one-eighth inch thick over it. The degree of softness, which this rubber coating should possess, is important. For rapid work it should be as springy as possible, while a hard surface is best for manifolding. When first turned out the platen rubber is soft, hardening after a few months' exposure to the air. The feed rolls were formerly made of wood, with a few rubber bands stretched over them, but these are always made of rubber now.

Like the wringer, the typewriter is an American institution and over 90 per cent. of the world's typewriters are made in the United States. The export trade in typewriters amounted for the fiscal year ending June 30, 1909, to \$6,899,069, for the same period ending 1910 to \$8,239,510, and for the first 9 months of the fiscal year ending June 30, 1911, to \$6,917,174. Great Britain is our best customer for typewriters, the value of the exports to that country amounting to nearly \$2,000,000 a year, Germany comes second, with purchases of about half that amount. The English makers have not thus far been able to turn out a first-class machine, though they have tried to imitate some of the American machines exactly, part for part.

No one rubber company has a monopoly in making typewriter rolls, but these are supplied by all of the great rubber concerns. There are no particular problems connected with their manufacture, though the platens must be accurately trued. The type has no great effect upon the platen, but the punctuation marks gradually dig grooves in it, necessitating a new rubber covering. In fact, any rubber roll may be recovered, in whole or in part, and the repair business is becoming an important branch of the trade.

As nearly as can be estimated, about 1,500,000 typewriters have been made and sold by American companies. Figuring renewals of old rolls, which occurs on an average about once a year, and rolls for new machines, the business for typewriter manufacturers, must amount to considerably over a million rolls a year.

MADE OF GNU RUBBER.

Not O'Sullivan's "new rubber," but short pieces of garden hose, is what the horns of the fighting Gnus at the New York Zoo are equipped with. They still fight, but ineffectively, and rubber has scored another triumph.

Replete with information for rubber manufacturers: Mr. Pearson's "Crude Rubber and Compounding Ingredients."

REFORMING RUBBER; THE NEW PROCESSES.

BY JOSEPH T. WICKS.

CONSIDERING these new processes of treating rubber waste: remanufacturing old rubber cab tires, wornout valves and cuttings of cured sheet, making the same into cylindrical buffers and other new moulded goods, for the market, by the process known as reforming rubber, the reforming process is, in our opinion, certainly not an improvement.

The thing that first strikes us is that none of the men engaged therein are india-rubber men. Neither, as a rule, do they employ rubber men. Ask the managers what they have been; a civil engineer conducts one factory; a manufacturing chemist of drugs and chemical manures heads another reforming rubber works. It is the same with the workers; they are drapers' assistants, engineers, travelers, with a sprinkling of rubber workers.

We fail to see how such heterogenous help can hope to make a success of a new industry. One would think that men who know what has been done in the manufacture during the past sixty years ought rather be employed; no, it seems to be a case of "Fools rush in where angels fear to tread."

It is our practical and expert opinion that this reforming, as now conducted, cannot be made to pay; it is not a commercial process; the whole thing is amateurish and would not be tolerated by experienced rubber men.

We consider that the cost of the expensive steel molds used in this reforming process is absolutely prohibitive. To prove this assertion we will make some comparative tests.

The rubber powder, or, as it is usually called, rubber crumb, is prepared from good quality cab tires. Old cab tires are ground on a powerful two-roll grinder, reduced to fine crumb; the crumb is dried in an oven, and as wanted taken out of the oven in a warm state, sprinkled lightly with petrol, and is then ready to be placed in the steel moulds for pressing into the shape of the required article.

For instance, to make an air-pump valve for a steamship. In the ordinary way we take a turned steel ring, six inches diameter by one-half inch thick. Then we take a piece of compounded rubber sheet and roughly trim it to the size of the steel ring and place the rubber valve therein; the valve is now ready for pressing and curing. This process of making a valve for a ship's pump is extremely simple and inexpensive.

Now by the new reforming process, instead of this simplicity the process is complicated and expensive.

We use the steel valve ring, but as the rubber is in the state of "crumb," being light and bulky, to get this crumb into the ring a second or outer ring is required as a container of the crumb. To make a valve one-half inch thick requires about 1½ inches of bulky crumb. Then you need a plunger to force and press the crumb into the original valve ring. So that in place of one ring, by the new process two rings and a powerful plunger are required. The manufacture will not stand the cost of these expensive additional tools. Consider the dozens of various sizes of valves, all requiring tools.

Such a valve made by the reforming process is cured for about ten minutes at 160 pounds steam pressure. Here, again, is another fault; as rubber is a vegetable material it will not stand 160 pounds steam pressure.

We know of a ship's engineer who was induced to put these rubber crumb valves into his pumps. He could not get his ship out of the West India Docks, London, before the valves broke into pieces. That engineer was lost as a customer for reformed rubber.

This valve failure means that the material of which the air pump valves were made was not homogeneous, there being insufficient cohesion between the particles of crumb.

The same will apply in making round buffers for railway trucks. A buffer two inches thick will require, say, five inches

of crumb, to be pressed down to two inches; hence additional tools to do the job by the new process.

The reforming process is, moreover, very wasteful. For instance, in moulding shoe-heel pads from steel plates 10 inches square, six of the small plates on a larger plate, making 30 by 30 inches. Suppose the pads are 5/16 inch thick; to mould them from crumb free from faults, the crumb is spread over the moulds to the depth of nearly one inch. When pressed and cured there is a complete sheet, giving 1/32 inch, or even more, thickness of waste, besides the extra thickness of each of the numerous pads.

These heel pads are cured for about eight minutes at 160 pounds steam pressure. On account of excessive heat many of these pads are "crusty" in a few weeks.

The hydraulic presses are enormously powerful, giving 1,000 pounds per inch on the ram, for this light work of heel pad moulding.

Therefore nothing but steel moulds can be used under these presses. It is well known that by the ordinary method there is little or no waste in making heel pads. The disadvantages in the new process are:

(1) Machinery required is excessively powerful and too expensive.

(2) Costly and additional moulds.

(3) Wasteful method, there being too much waste as cured trimmings.

(4) Goods imperfect and liable to perish.

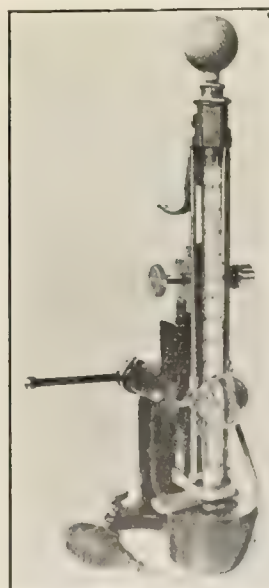
(5) Manufacture does not pay; no profits have been earned up to date.

One London company's shares, \$5 when first issued, rose to \$20, but have now fallen to much under \$5.

The new men engaged in this new industry should adopt the ordinary methods of manufacturing moulded rubber articles. Unless this change is made, and the new factories run on a commercial basis, we shall in two or three years' time look in vain for the present firms, as excessive running expenses will destroy them. It is folly to attempt the manufacture of rubber goods without the aid of skilled mill managers and trained workmen.

THE SHORE SCLEROSCOPE.

THE invention of Albert F. Shore, this simple but ingenious little instrument offered the first reliable means of making a quick and accurate test of the hardness of metals. Its operation



THE SHORE SCLEROSCOPE. [The Shore Instrument Manufacturing Co., New York, N. Y.]

tion is based on hardness or resistance to penetration, offered by the metal or other material, as recorded by the height to which a small plunger hammer equipped with a peculiarly shaped point, will rebound, after being dropped on to its surface. It is obvious that the harder the material, the sharper the rebound will be, a soft or comparatively non-resistant substance tending to absorb the shock of the impact. A scale registers the extent of the rebound and affords an accurate idea of the hardness of the material under test. In the details of its construction, to allow of its use in conducting different tests, the instrument displays more than ordinary mechanical ingenuity, the elevation and release of the plunger hammer being effected by means of rubber bulbs. [The Shore Instrument Manufacturing Co., New

PROSPECTS OF INCREASED RUBBER CONSUMPTION.

PROMINENT amongst the many interesting features of the recent Berlin meeting of the Rubber Commission, attached to the German Colonial Economic Committee, was a paper by General Director Louis Hoff, President of the Central Association of German Rubber Goods Factories, Harburg, on the "Expansion of Rubber Consumption."

In his opening remarks, Herr Hoff stated that neither he nor the largest proportion of his colleagues, shared in the apprehension which had been expressed in certain quarters, that the consumption of rubber would not easily absorb in the immediate future the increased supply coming forward. He pointed out that there was scarcely a branch of science or of technical industry, in which rubber has not already been used, with the prospect that consumption would increase, provided its progress were not impeded by a high price for the raw material.

OLD AND REGENERATED RUBBER.

Nor does the prospective additional supply of regenerated rubber give cause for alarm. It is estimated that while within the last five or ten years, the production of crude rubber has increased by about 5%, the manufactured product has been augmented in a much larger proportion. This could only arise from the more extensive use of plastics and of regenerated rubber; the latter fact to a great extent arises from the important progress made in regenerating processes. Statistics of imports and exports do not represent, with any degree of completeness, the quantities of old and regenerated rubber used by manufacturers, but Herr Hoff considers himself justified in estimating, that in a factory of average character, the quantity of those components used, exceeds that of the crude rubber employed. According to information received, the use of regenerated rubber has tripled or quadrupled within the last five years.

The extent to which the consumption of old and regenerated rubber has of late increased, is further illustrated by their enormously increased prices. Thus old rubber which 10 years ago was worth \$12.50 to \$15 per ton, now varies between \$60 and \$90. By these conditions, the varied applicability of rubber and the practical impossibility of replacing it, are demonstrated, so that an extension of consumption is a very easy matter.

At the same time, articles which contain more or less old rubber, are not, it is remarked, of the same quality as those in which only pure crude rubber has been used. Many articles have in this manner deteriorated in quality, thus opening the way for increased competition on the part of other materials. Another difficulty has arisen from the advanced cost of rubber manufactures, which has impaired their selling capacity. Instances of these conditions are afforded by rubber toys and rubber balls.

ADVANTAGES OF CHEAPER RUBBER.

In electro-technical manufactures, rubber has had an important opportunity of regaining ground, which had been more or less lost through the employment of all possible substitutes, of a more or less suitable character. The same remark applies to erasing rubber and to the so-called "artificial rubber," from which numerous small articles are made. The latter, which have the appearance of rubber, but are lacking in durability, would disappear from the market if a cheap rubber material were available for their manufacture.

With regard to the future, Herr Hoff remarks in conclusion, that with an abundant supply of rubber, it would be possible for the industry within a few years, to regain supremacy in the positions where it had been forfeited through the high cost of raw material. As it is not to be anticipated that manufac-

turers of regenerated rubber will retire from the field of competition, but that its use will likewise increase, the adoption of new articles by the regular industry will become necessary.

POSSIBLE NEW OUTLETS FOR RUBBER.

Illustrating the above remarks, Herr Hoff refers to the following branches of manufacture as affording opportunities for the more extensive use of crude rubber.

1. Rubber mats and floor coverings at equivalent prices, would undoubtedly prove superior to linoleum.
2. With cheap raw material, the use of hard rubber toys, combs, ornaments and toilet articles would certainly much increase.
3. Enameling factories. The utilization of rubber for coating objects exposed to the weather and corresponding influences, is a purpose for which the use of rubber could, with suitable prices, be considerably extended.
4. For use by artificial leather factories, and likewise for the impregnation of textile fabrics. In the latter branch other materials are now being largely used, while impregnation with such a reliable material as rubber would be preferable.
5. Flooring tiles, etc. In many cases rubber floor tiles would be more desirable than those of porcelain or pottery.
6. Rubber might be successfully used, it is suggested, as a veneer for wood.

NO GROUNDS FOR DISCOURAGEMENT.

It is further urged that the danger of an over-production of crude rubber is not to be seriously regarded. On the contrary, it is maintained it would benefit the entire rubber industry, planters as well as manufacturers, if, as a result of large quantities coming upon the market, prices attained stability, without being exposed to the extensive fluctuations, caused last year by speculative manipulations.

A WORD TO PLANTERS.

Herr Hoff in conclusion tenders the following advice to planters:

"I would ask planters not to be discouraged, but quietly to plant their rubber. Let them deliver us a good, uniform quality, and we shall in due time see to working it up. Of course, care must be taken, only to plant rubber, where conditions exist for the successful production of crude material, fit to compete in the world's markets."

SOME LEGAL ASPECTS OF THE PRESENT CONTRACT IN USE IN SELLING CRUDE RUBBER IN THE PORT OF NEW YORK.

THE Court of Appeals, the highest court of the State of New York, has recently decided a rubber case in which the form of contract now used in the port of New York, in the selling of crude rubber, was questioned on several grounds.

No opinion was written in this case, and, therefore, it is thought that some account of the questions which were before the court would be of interest and practical value.

The contract in the above case was made by the president of the purchasing corporation. It was contended by this company that the contract was not binding upon it, because its by-laws contained provisions which vested the buying power in the treasurer. This by-law was not called to the attention of the seller at the time of making the contract, and was raised by it only after the contract was made. The court held that the by-laws of the purchasing corporation were not in any way binding upon third persons dealing with the corporation unless a knowledge of these by-laws was actually brought home to the seller and was known to it at the time the contract was entered into.

This point is of special interest today. Most of the large contracts for the sale of rubber and other merchandise at present are made between corporations, instead of between individuals, either acting by themselves or as partners, as was the case a few years ago. The court thus affirms the doctrine which it had already laid down, to the effect that the president of a corporation, in the ordinary course of business has power to make routine purchases which will be binding on the corporation, regardless of any by-laws which may exist limiting his powers, unless knowledge of such by-laws is brought home to the persons with whom these officers deal.

The injustice of any other rule is apparent; for were the law not as it is, it would be possible for the president of a company to make contracts which, at will, the corporation could repudiate merely by producing by-laws upon its minute books limiting the president's powers, which by-laws were known only to itself.

Another objection raised to the contract was that it was void under the Statute of Frauds. This point is of particular interest, because it is probable that a very large number of the contracts made daily among rubber merchants here are, strictly speaking, invalid under this statute.

It will be recalled that the Statute of Frauds is a law passed in the reign of King Charles II, providing that "no contract for the sale of any goods, wares or merchandise, for the price of ten pounds sterling or upwards, shall be allowed to be good, except the buyer shall accept part of the goods so sold, and actually receive the same, or give something in earnest to bind the bargain, or in part payment, or that some note or memorandum in writing of the said bargain be made and signed by the parties to be charged by such contract, or their agents thereunto lawfully authorized."

The contract in this case was entered into in this way: the president of the buyer called up an officer of the selling corporation in New York, on the telephone, and ordered the rubber. During that day the selling company mailed a form of contract signed by it to the buyer at its office, which was outside the State of New York. This contract was never signed by the buying company, but various letters were written by it to the seller, mentioning the contract and its terms; and these, the court held, were a sufficient memorandum of the contract to permit of its being a valid contract under this Statute of Frauds. Had no such letters passed between these companies subsequent to the making of this contract, it probably would have been unenforceable by the seller, had the buyer repudiated it, as was the case here. This statute is one of decided merit, but sometimes, by hiding behind its technical provisions, one is able to avoid liability on a contract, which in every other way is valid and binding. Merchants should bear in mind that sales of rubber made as this one was made, are unenforceable by the seller, in the absence of some confirmation in writing by him, or at least until some delivery has been made.

Another question of decided interest to merchants was raised in this case. The buyer repudiated the contract not long after it was made, and about this same time the market began rapidly to decline. So much did it decline that the difference between the contract price and the market price on the delivery day represented a very considerable sum. The buyer contended that as soon as it notified the seller that it would refuse to accept the goods when the time for delivery arrived, it was the duty of the seller to at once go into the market and sell these goods in order to prevent further loss. This contention was not sustained by the court, but it affirmed its former rulings, which were to the effect that the seller of an article which has a constant market value, the price of which can be established from day to day, is not bound to sell as soon as the buyer gives notice of an intention to repudiate the contract; but instead, has a perfect right to refuse to accept such a repudiation, and may continue to regard it as a valid and enforceable contract, and, if

he wishes, perform his contract to the letter, by tendering the goods to the buyer when the delivery day arrives, despite anything the buyer can do. If this course is pursued the damages will be the difference between the market price on the day of delivery and the price named in the contract.

It often happens that merchants sell goods on a declining market and afterwards the customer gives notice that he will not take the goods when the delivery day arrives. Under such conditions the seller, uncertain of his legal rights, rushes into the market and sells the goods. This he is under no obligation whatever to do. In the case considered by the Court of Appeals, the seller constantly adhered to its determination to carry out its contract in good faith, regardless of the buyer's repudiation, and in so doing it was fully upheld by the Appellate Division and by the Court of Appeals.

A CROWN FOR THE "SPEED KING."

THE "Firestone Speed King Crown" has been presented to Bob Burman in recognition of his wonderful speed record of 141.73 miles an hour at Daytona, Florida. This is the fastest ever traveled by man, and in attaining this speed Burman broke the world's record for kilometer, mile and two miles. The



THE SPEED KING'S CROWN.

crown was donated by H. S. Firestone, president of The Firestone Tire & Rubber Co., whose tires Burman used on his Blitzen Benz. The crown itself is a copy of the one used at the coronation of King George V and is a marvel of the goldsmith's art.

TWITCHELL AIR GAGE PATENTS SUSTAINED.

MANY manufacturers of pneumatic tires issue a schedule, giving the pressures to which the various sizes should be inflated to ensure long and uniform service. An air gage is indispensable for the regulation of this pressure, one of the devices employed for this purpose being the Twitchell air gage, manufactured by the W. D. Newerf Rubber Co. (Los Angeles, California.) The validity of the Twitchell patent was attacked and the owners, the above company, resorted to the courts to establish its validity and protect themselves from infringements. Under an interlocutory decree, recently handed down by the United States Circuit Court for the Southern District of California, the validity of the patents has been upheld, infringers restrained and damages allowed against them with costs.

The Diamond Rubber Co. and Its Sponsors

IN 1898, the office force of the Diamond Rubber Co. was five in number, with a factory force of 250. At present it has an office force of 250, and an average factory force of 5,000.

Ohio C. Barber, the pioneer of modern match manufacturing, for years the president of the Diamond Match Co., organized the Diamond Rubber Co. in 1895. It was reorganized in 1898 with A. H. Marks as head of the manufacturing department, W. B. Hardy as president, and W. B. Miller as head of the sales department, experienced rubber men, with Ohio C. Barber a large stockholder and A. H. Noah treasurer. The company is now capitalized at \$10,000,000, all common stock, and it is said to be quoted at somewhere near \$300 a share.

From year to year, outgrowing their old buildings, departments have been divided and given new quarters, and other departments added, so that within a few years almost all the old buildings have been replaced with the five-story and basement type of building of the most modern brick, concrete and steel construction. Some of these buildings are at least 600 feet long and 100 feet wide, and the plant's present floor space is more than 36 acres.

In 1898 the chief articles produced were bicycle tires, belting and mechanical goods. At that time the automobile tire was being developed, and the next year tires became a separate department under M. A. Flynn, which in its busy season produces more than 2,400 tires per day. The mechanical goods output is large and covers all lines. The insulated wire unit supplies everything from small electric wire to cables. Other units are for the manufacture of all types of steam packing, rubber boots and shoes, hard rubber, accessories for automobiles and aeroplanes, etc.

It was in 1898, that Messrs. Marks and Miller took the active management of the company's affairs off the hands of O. C. Barber and the others of the old regime, and it was only a few months afterward that things began to pick up. One took charge of the company's sales, the other looked after the manufacturing. With him to Akron, Mr. Marks brought his reclaiming process, and it was this, together with the indefatigable efforts of the young men who had come out of the east, that made the Akron company one of the largest and most successful in the trade.

A. H. Marks is a graduate of the Massachusetts Institute of Technology, and of Harvard. He entered the employ of the Boston Woven Hose and Rubber Co., shortly after graduating as a chemist. Later he became connected with the Revere Rubber Co., Boston.

Aside from the brilliant salesmanship of W. B. Miller, it is the organizing faculty and the inventive ability and knowledge of the chemistry of rubber of Mr. Marks that has given to the Diamond its phenomenal growth.

The Marks alkali process for rubber reclaiming has proved

to be one of the most successful in the history of the reclaiming business. In addition to the Alkali Rubber Co. in Akron, in which he has a substantial interest, he and his associates put up the great factory in England, known as the Northwestern Rubber Co., Limited. The reclaiming factory of the Continental Caoutchouc und Rubber Co., some eight miles from Hanover, Germany, is also operated under a license from Mr. Marks. In Canada, Italy, France, and other countries where rubber manufacture is at all important, the process is used and the inventor receives a royalty.

He was a pioneer in the extraction of rubber from bastard and resinous rubbers, in guayule extraction, and in a variety of other notable manufacturing advances.

Although only forty years of age and a millionaire, he is not a bit puffed up; on the contrary he has an exceedingly modest bearing.

He is pleasant and affable, but his employees call him "the man who never smiles." He is too busy. His office is littered with samples of rubber products, trade magazines, and dozens of other things. It isn't a well ordered office. He is always so engrossed that little things do not make any difference.

It is not to be imagined that he never relaxes from the strain

of business, however. He is an enthusiastic motorist and an exceedingly skillful driver. He also goes in for motor boats and in the summer keeps a boat in Marblehead Bay that is said to be the speediest craft on the New England coast. He also plays golf, a good game, but it is doubtful if he could beat—but that perhaps would



MAIN PLANT OF THE DIAMOND RUBBER CO., AKRON, OHIO.

sound a little too much like boasting on the part of the writer.

Long before he left the East, in fact when he first developed his alkali process, although only a youngster, Mr. Marks is said to have prophesied that it would one day be of far more commercial importance than the acid process—a prediction likely to be speedily realized.

RUBBER BANDS FOR WOMEN'S HATS.

COMMENTING on a recent proclamation, made by the police of Vienna and other European cities, against the wearing by women, of hat pins the unprotected points of which project beyond the brims of the hats they are used to secure, and which are denounced as a menace to public safety when worn in public conveyances or crowded resorts, *Gummizeitung* suggests a return to the elastic bands, with which the wearers of "artistic confections in millinery" were wont to secure them in bygone years. Our contemporary intimates that the best of the "protectors" proposed for the dangerous points, offer but an unsatisfactory solution of the problem, whereas the elastic band, of a color to match the hair, would be inconspicuous and sufficiently secure. And then, as our esteemed contemporary points out, what a business boom in "hat elastic" the rubber industry would enjoy.

NEW TRADE PUBLICATIONS.

THE UNITED STATES TIRE CO. (New York). "How to Keep Down Your Tire Expense." Under this title the above company publish a pamphlet of 48 pages, prepared by its Service Bureau, in which the proper care and use of pneumatic tires is discussed on the basis of over twenty years experience in the making and selling of tires.

Proceeding on the principle that a tire-makers' duty is but half done when he makes good tires and that he is under obligation to show the user how to get every foot of mileage out of them that he has put into them, the booklet starts out with a lucid description of the method of building an automobile tire, as pursued in the company's various factories, the argument being that the user is more likely to treat his tires intelligently, if he knows how they are made—the nature of the material entering into them and the treatment it receives in the processes of manufacture. This part of the subject is considered in detail, numerous illustrations serving to elucidate the description.

"Tire Troubles" forms the subject of Chapter II, and is dealt with in a thoroughly practical manner, abstract technicalities being avoided and the various causes of injury to tires, due to the carelessness or ignorance of the user presented plainly as well as rules for the care of tires under all circumstances.

"First Aid to Injured Tires" is discussed in Chapter III, the various appliances for use in this work being fully considered and where necessary illustrated.

A closing chapter is devoted to miscellaneous sundries for use with tires and the result of proper tire care.

The entire work has been prepared with a view to the presentation wholly of important facts in connection with tire care, extraneous matter and technical complications being carefully avoided. It is a guide to the good use of good tires that every motorist can profitably study and follow.

THE DERBY RUBBER CO. (Shelton, Conn.) "Light on Derby Rubber." A brochure on reclaimed rubber is a rarity, one compact, business-like and informing is a still greater rarity. The 12-page booklet designed to inform rubber manufacturers about the Derby products is a most practical pamphlet. Typographically it is perfect. The brief preface on reclaimed rubber in general is readable and true—every word of it. Then follows a series of brief paragraphs, headed each by a special Derby grade, with an explanation of the type of stock under consideration and the use to which it is put in the rubber mill. As a *finis* there is a broad invitation for those interested to get in touch with the company by letter or by personal inspection of their up-to-date laboratories and factories.

THE GOODYEAR TIRE & RUBBER CO. (Akron, Ohio), "How to Select an Automobile Tire," is the title of a booklet of 32 pages, published by the above company, in which are set forth the merits of the Goodyear tire equipment, shoes, inner tubes, patches, tire-protectors and the Goodyear air bottle, to each of which a separate chapter, illustrated, is devoted. Typographically and from an artistic standpoint, the booklet is in every way worthy of its subject; the appropriate design of the cover being in itself sufficient to compel attention to the contents, which every automobilist will find worthy of perusal.

THE 1911 Catalogue of Rubber Boots and Shoes of the APSLEY RUBBER CO. (Hudson, Massachusetts) is one of the most complete and comprehensive of the season in this line of goods. The cuts are clear, and relate to styles for men and women to suit every demand, the shapes being adapted to the latest styles in leather shoes. The prices given are net—a new departure in the catalogues of this company. [5¾" x 6¾". 54 pages.]

Replete with information for rubber manufacturers: Mr. Pearson's "Crude Rubber and Compounding Ingredients."

THE EDITOR'S BOOK TABLE.

PROCEEDINGS OF THE PAN AMERICAN COMMERCIAL CONFERENCE.
Washington, D. C., The Pan American Union.

A COMPLETE Report of the Proceedings of the Pan-American Commercial Conference, held February 13 to 17, in the beautiful new building of the Union at the National capitol. The 308 closely-printed octavo pages of this interesting document furnish a verbatim report of the papers presented at the conference, the discussion, in connection with them, etc., together with alphabetical lists of official authorities and experts who led the discussions at the conference and delivered special addresses, and of the speakers and a list of the firms, corporations and commercial bodies represented, together with a carefully-compiled index of 20 pages, the whole prefaced with a view of the Pan-American Union Building, and containing a group photograph of the conference. The addresses of the various speakers, bearing as they do, on the promotion of better relations between the United States and sister-nations in the western hemisphere, are interesting and instructive and the report is a memorable testimonial to the good work the Pan-American Union is accomplishing for all America.

BRIEF AND ARGUMENT FOR THE AMERICAN TOBACCO CO., et al., submitted in the October term, 1910, of the Supreme Court of the United States, by William M. Ivins, of Counsel.

THE two hundred pages of this document contain a wonderfully clear presentation of the defendant's side of the issue between the government and the company. In its arrangement for reference, for hasty reading, or for weighty consideration, it is strikingly well grouped and shows a masterly knowledge of bookmaking, and of timely and sequential presentation. Thirteen pages are devoted to a "Syllabus of the Argument," which epitomizes all that follows. Then comes the argument, which in addition to its interpretations of the Anti-Trust Act of 1890, takes up the history of the creation of corporations and their various acts and privileges. It gives a concise history of the defendant company, and in twenty subsequent sections exhaustively discusses the law, its interpretation, "monopoly," "combination," "conspiracy" and "competition."

OTHER BOOKS RECEIVED.

THE PRODUCTION OF ASBESTOS IN 1910. Published as an advance chapter from "Mineral Resources of the United States for the Calendar Year, 1910," by the Department of the Interior—Geological Survey, Washington, D. C. This octavo pamphlet of 13 pages, by J. S. Dillon, gives, in addition to statistics and other data in regard to production, and imports, valuable information relating to asbestos deposits in the United States, the foreign production of asbestos and the purposes for which asbestos is used.

HIGHWAYS AND BYWAYS, A NEW MAGAZINE, the first issue of which has recently appeared in San Francisco, California, is an interesting publication devoted, as its title indicates, to good roads, the motor car and the motorcycle. The number before us is printed in sepia ink on a rich ecru-tinted paper and contains some excellent illustrations. The 84 pages of reading matter treat intelligently of the subjects to which the magazine is devoted.

RUBBER CULTIVATION IN BRITISH INDIA.

According to a report from the United States consul at Madras, the area under cultivation to rubber in his district, is 30,000 acres, from which, in 1910, a yield of about 180,000 lbs. was obtained. The consul dwells on the serious nature of the labor problem in that section, 50,000 laborers having left for Ceylon in 1910 and 32,000 for the Straits Settlements. The low wages paid by the Madras planters is blamed for the exodus.

Materials Used in Rubber Manufacture.

IN VIEW of the large extent to which chemicals and compounding ingredients enter into rubber manufacture, the annexed tables, specially compiled by THE INDIA RUBBER WORLD from official returns, will doubtless prove of interest. While the quantities shown are in many cases large, they of course include the consumption of the other branches of national manufacture in the same articles. As illustrating the actual rates and incidence of duties, the figures are, however, directly applicable to the rubber manufacturing industry.

The statements of the results for the fiscal years 1909 and 1910 practically form a comparison between the Dingley and Payne tariffs. With the continued free entry of many important materials and the reductions in duty on a number of others, American manufacturers should be in a good position for competing with their European rivals in the world's markets, so far as the cost of materials is concerned.

IMPORTS OF PRINCIPAL MATERIALS USED IN RUBBER MANUFACTURE.

	FISCAL YEAR, 1909.				FISCAL YEAR, 1910.			
	Quantity.	Value.	Rate of Duty.	Equal to.	Quantity.	Value.	Rate of Duty.	Equal to.
ACIDS.								
Carbolic	4,729,552 lbs.	\$321,633	Free	Free	4,507,693 lbs.	\$275,600	Free	Free
Hydrochloric or Muriatic....	8,520 lbs.	172	Free	Free	1,143 lbs.	57	Free	Free
Sulphuric	38,296 lbs.	660	¼c. lb.	14.51%	36,684 lbs.	1,063	¼c. lb.	8.63%
AMMONIA.								
Carbonate	414,683 lbs.	24,752	1½c. lb.	25.13%	485,803 lbs.	26,279	1½c. lb.	27.73%
ASBESTOS.								
Unmanufactured	54,817 tons	1,021,413	Free	Free	47,408 tons	1,122,085	Free	Free
Nine mos. ending March, 1911 .....	.....	.....	Free	.....	40,589 tons	949,912	Free	Free
From Canada	95%							
" Russia	2%							
ANTIMONY.								
Ore, Crude, Sulphide of.....	6,021,135 lbs.	170,443	Free	Free	723,205 lbs.	24,944	{ 1c. lb. on antimony contents }	28.90%
From United Kingdom.....	55%							
" China	10%							
" France	9%							
" Germany	11%							
" Servia	5%							
Salts of Antimony.....	595,095 lbs.	65,596	25%	25%	.....	.....	.....	.....
Oxide of Antimony.....	.....	.....	.....	.....	339,116 lbs.	15,797	{ 1½c. lb. and 25% }	57.38%
ASPHALTUM OR BITUMEN.								
Crude	109,297 tons	480,740	\$1.50 ton	34.10%	114,369 tons	\$486,305	\$1.50 ton	35.28%
From Cuba.....	6,457 tons	33,333	{ \$1.50 ton less 20% }	23.25%	13,899 tons	73,438	{ \$1.50 ton less 20% }	22.71%
Dried or advanced.....	7,232 tons	73,188	\$3 ton	29.64%	13,482 tons	136,500	\$3 ton	29.63%
From Cuba.....	15 tons	135	{ \$3 ton less 20% }	26.67%	.....	.....	.....	.....
Nine mos. ending March, 1911 .....	.....	.....	.....	.....	115,887 tons	537,856	.....	.....
BURGUNDY PITCH.....								
	814,369 lbs.	25,809	Free	Free	1,364,166 lbs.	35,210	Free	Free
CHALK.								
Unmanufactured	96,311 tons	93,451	Free	Free	116,115 tons	103,842	Free	Free
From United Kingdom.....	75%							
" France	24%							
Ground, precipitated, etc.....	1,368,005 lbs.	32,225	1c. lb.	42.31%	2,728,382 lbs.	69,293	1c. lb.	39.37%
From United Kingdom.....	50%							
" France	15%							
" Germany	25%							
BALSAMS.								
Canada	4,673 lbs.	2,375	Free	Free	16,645 lbs.	8,432	Free	Free
Storax	19,582 lbs.	2,499	Free	Free	19,189 lbs.	2,226	Free	Free
Tolu	39,668 lbs.	5,589	Free	Free	46,946 lbs.	7,178	Free	Free
CADMIUM								
	.....	4,643	Free	Free	3,083 lbs.	1,657	Free	Free
CHLORIDE OF CALCIUM.....								
	149,529 lbs.	587	25%	25%	528,946 lbs.	2,073	25%	25%

COAL TAR.

Crude and pitch of.....	27,791 bbls.	56,753	Free	Free	35,658 bbls.	83,924	Free	Free
From United Kingdom.63%								
" Canada .....28%								
Coal tar products not medicinal, colors or dyes, including naphthaline, nitro-benzol (not shown separately)....	.....	.....	Free	Free	.....	.....	Free	Free
From Germany .....70%								
" United Kingdom. 8%								

EMERY AND CORUNDUM.

Ore, Emery	7,467 tons	149,567	Free	Free	13,374 tons	253,725	Free	Free
Corundum, abrasive .....	.....	.....	.....	.....	10,745 tons	176,757	Free	Free
Abrasives, crude artificial..	.....	.....	.....	.....	.....	16,361	10%	10%
Practically all from Turkey; small quantity from Argentina.								
Grains and ground, etc.								
Corundum	1,172,863 lbs.	61,273	1c. lb.	19.14%	66,699 lbs.	3,928	1c. lb.	16.98%
Emery	1,241,034 lbs.	58,086	1c. lb.	21.37%	1,439,282 lbs.	63,800	1c. lb.	22.56%
From United Kingdom.60%								
" Canada .....25%								
" Germany .....13%								

FULLER'S EARTH.

Unwrought and unmanufactured	2,146 tons	16,969	\$1.50 ton	18.97%	1,578 tons	12,252	\$1.50 ton	19.32%
Wrought and manufactured..	9,343 tons	83,300	\$3.00 ton	33.65%	11,613 tons	106,703	\$3.00 ton	32.65%

GLYCERINE.

Crude (not purified).....	35,359,240 lbs.	2,919,483	1c. lb.	12.11%	40,888,934 lbs.	3,622,260	1c. lb.	11.29%
From Cuba.....	135,657 lbs	10,999	{ 1c. lb. }	9.87%	135,778 lbs.	12,745	{ 1c. lb. }	8.52%
			{ less 20% }				{ less 20% }	
Refined	539,740 lbs.	60,017	3c. lb.	26.98%	5,342 lbs.	1,507	3c. lb.	10.63%
Nine mos. ending March, 1911	.....	.....	.....	.....	29,341,879 lbs.	3,033,180	.....	.....
From France .....37%								
" United Kingdom.31%								
" Belgium .....10%								

GUMS.

Copal, Kauri and Damar...24,861,428 lbs.	2,388,458	Free	Free	29,357,579 lbs.	2,961,800	Free	Free
Nine mos. ending March, 1911	.....	.....	.....	17,202,305 lbs.	1,609,337	Free	Free
From Australia .....60%							
" Straits Settlements.20%							
" Dutch Indies.... 9%							

LANOLIN AND WOOL GREASE.

Lanolin .....	.....	.....	.....	.....	27 lbs.	3	25%	25%
Wool Grease.....11,630,116 lbs.	219,408	½c. lb.	26.48%	.....	.....	.....	.....	.....
" " Crude .....	.....	.....	.....	13,396,097 lbs.	230,538	¼c. lb.	14.53%	.....
" " Refined, etc.....	2,873,088 lbs.	94,825	½c. lb.	15.15%

MAGNESIA.

Calcined	49,026 lbs.	7,687	7c. lb.	44.64%	57,392 lbs.	9,286	7c. lb.	43.27%
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MICA.

Unmanufactured or rough trimmed	922,686 lbs.	358,457	{ 6c. lb. }	35.40%	1,684,015 lbs.	520,762	{ 5c. lb. }	36.31%
			{ and 20% }				{ and 20% }	

OILS.

Castor oil	6,336 gals.	65,575	35c. gal.	39.78%	6,666 gals.	6,678	35c. gal.	34.94%
Cotton seed oil.....	9,300 gals.	3,686	4c. gal.	10.09%	15,987,749 gals.	808,919	Free	Free
Linseed oil	28,102 gals.	12,249	20c. gal.	42.42%	463,174 gals.	256,249	15c. gal.	27.11%
Palm oil	58,971,777 lbs.	3,185,038	Free	Free	92,630,668 lbs.	5,584,862	Free	Free
Nine mos. ending March, 1911	.....	.....	.....	.....	45,968,102 lbs.	3,280,120	.....	.....
From United Kingdom.58%								
" Germany .....40%								
Rapeseed oil.								
Hemp and rapeseed oil ...	935,050 gals.	463,080	10c. gal.	20.19%	.....	.....	.....	.....
Rapeseed oil .....	.....	.....	.....	.....	963,216 gals.	417,746	10c. gal.	23.06%

PAINTS AND COLORS.

BARYTA.

Sulphate of, or barytes.

Unmanufactured	13,378 tons	47,505	75c. ton	28.12%	8,388 tons	21,286	\$1.50 ton	59.11%
Manufactured	2,879 tons	27,156	\$5.25 ton	55.65%	2,699 tons	27,191	\$5.25 ton	52.11%

BLACK.

Made from bone, ivory or vegetable substances (including lamp black).....

.....	25%	25%	25%	25%
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BLUES.

Prussian, etc.	8c. lb.	38.58%	8c. lb.	44.23%
Ultramarine	731,469 lbs.	63,074	3¾c. lb.	43.45%	690,896 lbs.	64,322	3c. lb.	32.22%
Cobalt and ore.....	102,268 lbs.	6,625	Free	Free	8,433 lbs.	1,581	Free	Free
Oxide of cobalt.....	6,361 lbs.	8,549	25c. lb.	18.60%	8,207 lbs.	8,500	25c. lb.	24.14%

GREEN.

Chrome green	4½c. lb.	33.12%	4¾c. lb.	25.98%
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LEAD.

Litharge	89,750 lbs.	3,098	2¾c. lb.	79.67%	83,264 lbs.	3,904	2½c. lb.	53.32%
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RED.

Vermilion Reds.

Containing quicksilver.....	65,570 lbs.	35,141	10c. lb.	18.66%	59,032 lbs.	33,682	10c. lb.	17.53%
Without quicksilver, etc....	15,721 lbs.	6,449	5c. lb.	12.19%	10,845 lbs.	1,798	4¾c. lb.	29.41%
Venetian Red	4,030,846 lbs.	28,566	30%	30%	2,913,586 lbs.	26,314	30%	30%

WHITING, ETC.

Whiting and Paris White, dry	2,089,981 lbs.	13,540	¼c. lb.	38.59%	2,868,239 lbs.	16,308	¼c. lb.	43.98%
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ZINC.

Oxide, dry	5,602,259 lbs.	311,588	1c. lb.	17.98%	6,636,902 lbs.	379,446	1c. lb.	17.47%
White sulfid or sulphide.....	1,316,081 lbs.	50,749	1¼c. lb.	32.42%	2,307,699 lbs.	68,925	1¼c. lb.	41.85%

PLUMBAGO	15,986 tons	1,463,717	Free	Free	21,597 tons	1,894,266	Free	Free
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POTASH.

Bichromate	3c. lb.	41.74%	2¾c. lb.	45.86%
Returned with chromate as.	171,542 lbs.	12,393	877,151 lbs.	42,039
Caustic.								
Not including refined.....	7,041,657 lbs.	294,709	Free	Free	8,785,491 lbs.	358,855	Free	Free
Refined	127,611 lbs.	9,289	1c. lb.	13.74%	141,430 lbs.	11,095	1c. lb.	12.75%
Nine months to March, 1911, unrefined and refined.....	.....	.....	.....	.....	5,617,363 lbs.	240,561	.....	.....
From Germany	70%							
" United Kingdom.....	10%							

PUMICE STONE.

Unmanufactured .....	.....	12,507	20%	20%	.....	.....	.....	.....
Unmanufactured, valued \$15 or less per ton.....	.....	.....	.....	.....	3,968 tons	25,014	30%	30%
Unmanufactured, valued over \$15 ton .....	.....	.....	.....	.....	312 tons	22,647	\$5 ton	7.70%
From Italy	95%							
Wholly or partly manufactured	2,444 tons	43,096	\$6 ton	34.03%	4,933,672 lbs.	27,381	¾c. lb.	67.57%

ROTTEN STONE.....

From United Kingdom.....	35%	22,438	Free	Free	.....	28,546	Free	Free
" Canada	50%							
" Germany	15%							

SODA.

Caustic	781,971 lbs.	24,742	¾c. lb.	23.70%	964,696 lbs.	31,338	½c. lb.	15.39%
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SULPHUR.

Sublimed or flowers of.....	425 tons	13,035	\$8 ton	26.12%	821 tons	23,914	\$4 ton	13.73%
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TALC.

Ground, powdered or prepared.	14,767,760 lbs.	94,761	20%	20%	17,976,403 lbs.	113,119	35%	35%
From Italy	65%							
" France	20%							
" Austria	10%							

TURPENTINE.

Venice	61,342 lbs.	5,345	Free	Free	111,565 lbs.	15,904	Free	Free
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WAX.

Mineral	4,829,898 lbs.	485,301	Free	Free	8,157,226 lbs.	585,994	Free	Free
Vegetable	4,088,099 lbs.	624,352	Free	Free	5,269,576 lbs.	823,293	Free	Free

ANALYSIS OF CHANGES EFFECTED BY PAYNE
TARIFF.

FREE ARTICLES CONTINUED FREE—Carbolic acid, hydrochloric or muriatic acid, asbestos, Burgundy pitch, chalk, balsams, cadmium, coal-tar and products, emery and corundum ore, gums, palm oil, cobalt and ore, plumbago, caustic potash (unrefined), rotten stone, Venice turpentine, wax.

FREE ARTICLES MADE DUTIABLE—Antimony ore, crude artificial abrasives.

DUTIABLE ARTICLE MADE FREE—Cotton seed oil.

AD VALOREM RATE UNALTERED—Chloride of calcium, blacks, Venetian red.

AD VALOREM RATE INCREASED—Pumice stone, talc.

AD VALOREM RATES REDUCED—None.

SPECIFIC RATES INCREASED—Oxide of antimony, barytes.

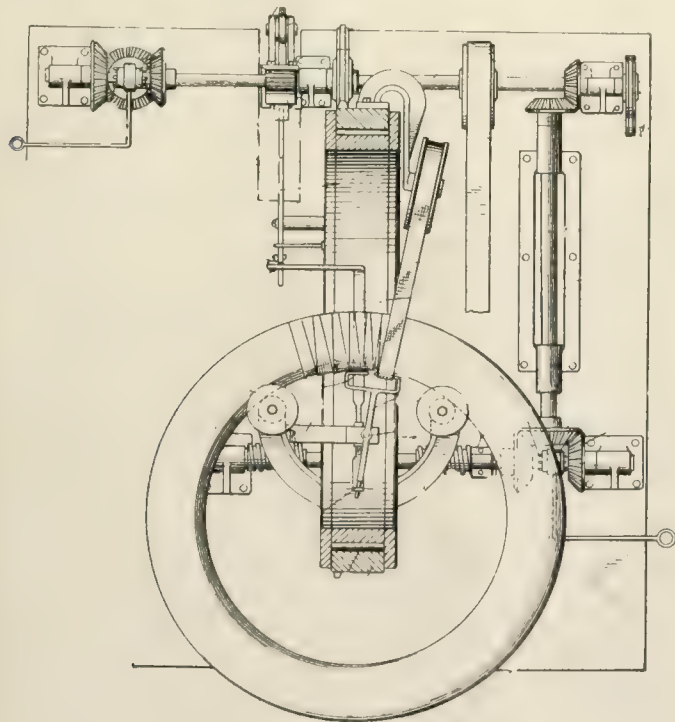
SPECIFIC RATES REDUCED—Wool grease, mica, linseed oil, ultramarine, chrome green, litharge, bichromate of potash, caustic soda, sublimed sulphur.

EQUIVALENTS OF SPECIFIC RATES INCREASED BY OPERATION OF LOWER VALUES—Carbonate of ammonia, asphaltum, emery grains, fuller's earth (unwrought), rapeseed oil, Prussian blue, oxide of cobalt, vermilion red (without quicksilver), whiting, white sulphide of zinc.

EQUIVALENTS OF SPECIFIC RATES REDUCED BY OPERATION OF HIGHER VALUES.—Sulphuric acid, ground chalk, corundum grains, fuller's earth (wrought), calcined magnesia, castor oil, barytes (manufactured), vermilion red (containing quicksilver), oxide of zinc, caustic potash (refined).

ROWLEY'S TIRE BUILDING MACHINE.

THE illustration shows in a general way a portion of the tire-building machine invented by Robert Rowley of New York (Pat. April 25, 1911, No. 990,392). The mechanism



ROWLEY'S TIRE BUILDING MACHINE.

is designed briefly to lay a strip of rubber frictioned fabric back and forth from edge to edge of an open belled tire shoe. It is also arranged to build a single tube type which may afterward be cut open on the inner circumference and thus form the usual open shoe.

CENSUS DISREGARD OF RUBBER STATISTICS.

IN VIEW of the extent to which rubber enters into our national manufactures, it is a matter of regret that its results did not form the subject of a special bulletin for the census of 1905, nor is there any assurance that any such special reports will be issued for the census of 1910, the results of which are now being compiled. In value, rubber, with 107 millions of dollars for last year, formed a close second to hides and skins, the imports of which in 1910 reached about 114 millions of dollars.

With regard to production, as the results for the separate branches of the rubber industry are shown in the census returns for 1905 under different heads, it is necessary to group them in order to arrive at the facts of the case. The figures for 1905 include among principal items of production:

Rubber boots and shoes.....	\$70,065,296
Rubber and elastic goods.....	62,905,909
Rubber belting and hose.....	14,954,186

Apart from the electrical uses of rubber, it is the basis of various other industries, so that it may reasonably be estimated to have represented in 1905 about 200 millions of dollars of our national manufactured output.

Since 1905 the business has expanded enormously. It would therefore be most interesting if the census would give us figures including the production of

Automobile and Cycle Tires.
Solid Tires.
Druggists' Rubber Sundries.
Hard Rubber.
Reclaimed Rubber.
Cements.
Carriage Cloth, Surface Clothing, Mackintoshes and Rubber Surfaced Goods in analogous lines.
Dental and Stamp Rubber.

Whatever may have been the situation in 1905, special interest attaches to the changes which have since occurred. Pending the compilation of the United States Census returns, those of the separate States, issued by the various State Statistical and Factory Inspection Bureaus, contain a good deal of pertinent information. Among the first of these returns is the report of the New Jersey Bureau of Statistics, which, to a great extent, anticipates the United States Census figures. By comparing the latest return, for 1909, with those for 1908 and 1904, as has been attempted in the subjoined table, the growth is seen of the New Jersey rubber production between 1904 and 1909, from 17 to 30 millions of dollars. This augurs well for the general prosperity of the industry.

COMPARATIVE TABLE OF NEW JERSEY FACTORY RESULTS.
(Rubber products, hard and soft.)

	1904.	1908	1909.
Number of establishments..	34	43	48
Capital invested	\$13,839,491	\$20,331,839	\$25,633,889
Average number employed..	4,516	6,641	7,450
Average yearly earnings per employee	\$491	\$521	\$510
Average number of days in operation	292	275	283
Average number of hours per week	63	57	58
Overtime worked in factories .....	...	9	14
Total hours of overtime....	...	127	163
Horsepower used	13,996	23,283	24,301
Value of stock used.....	\$10,387,887	\$15,852,257	\$19,049,186
Wages paid	\$2,219,398	\$3,461,070	\$3,800,066
Value of goods made.....	\$17,031,572	\$24,494,363	\$30,616,077
Average proportion of business done to capacity.....	.....	67.67%	77.39%

THE RUBBER TRADE AT TRENTON.

BY A RESIDENT CORRESPONDENT.

THE summer has witnessed a continuance of activity in the principal branches of the Trenton rubber industry, many of the factories running overtime. Among the latter, the Thermoid Rubber Co. have been working six nights a week and the Acme Rubber Co. four nights. Improved business is likewise reported by the Hamilton Rubber Manufacturing Co. and the Ajax-Grieb Rubber Co.

Through the installation of hose making and wrapping machines of the latest type, the Home Rubber Co. has doubled its capacity. A full line of tires and mechanical rubber goods will in future be carried at Nos. 80 and 82 Reade street, New York City, where this company now occupies the ground floor and basement.

Extensive improvements are in progress at the factory in Hamilton Square of the Mercer Rubber Co., which is being run nights.

A satisfactory volume of business is reported in both the tire and mechanical departments of the Empire Rubber Manufacturing Co. The Empire Tire Co. has opened a branch at No. 1921 Euclid avenue, Cleveland, where a full line of tires, tubes and rubber auto accessories will be carried. J. B. Todd, who has for some time acted in the capacity of special representative, will be the manager in charge of the new branch, which will be a distributing point for the State of Ohio.

Generally speaking, all mills producing garden hose are now extremely busy, while those manufacturing tires report favorable conditions, these articles being prominent features of present activity.

Welling G. Sickel, of the Hewitt Rubber Co., after having been confined to his home at Spring Lake, New Jersey, for some weeks with heart trouble is said to be on the road to recovery.

The Essex Rubber Co. have installed a notable display at the Shoe and Leather Fair (Boston—July 12-19) where they will show a varied line of rubber soles and heels fitted to both leather and canvas footwear. Their "Essex Rubber Rug" will also be given the place of prominence which it deserves.

THE RUBBER TRADE IN SAN FRANCISCO.

BY A RESIDENT CORRESPONDENT.

DEPRESSION seems still to hover over business generally in this city and conditions must now be said to be rather quiet, but steadily improving. It is safe to say that there never were better or brighter prospects than confront the business men of the city at this time. The crops throughout the entire State are in a most flourishing condition, the city is making extensive improvements in municipal matters, and the World's Fair will bring certain prosperity to every merchant here. It is this unquestionably bright outlook which keeps everybody in good spirits, and urges them to simply redouble their efforts to keep up a fair volume of business during quiet times.

The Republic Rubber Co. will establish a Pacific coast branch commencing about the first of September, at which time the new building which the firm is to occupy in San Francisco will be completed. Mr. M. E. Murray will come to taken charge as general Western manager with his headquarters in San Francisco. The San Francisco store will be directly under the supervision of Mr. Kanzee. The foundation of the building is being laid now, and the work rushed rapidly forward. It will be a two-story and basement building, and will be 70 x 137½ feet. It is being erected specially for a complete rubber store, and at a cost of \$40,000, and when completed will be the most complete and up-to-date rubber store in the district. The front will be of red

pressed brick with white trimmings, and the store front of large plate glass. It is situated on the southeast corner of Hyde and Golden Gate avenues. The Republic Rubber Co. will carry their full line of belting, their Lanco balata belt, hose, beside a full line of solid vehicle, motor truck tires and plain and "staggard" tread Republic automobile tires.

* * *

The Fisk Rubber Co. has just opened a branch store at Fresno, California, and another at Sacramento, California. They will carry a full stock of tires at these stores, and in addition thoroughly equipped repair departments with which to take care of repairs of all makes of tires. They report at the San Francisco office a very good trade so far this year.

* * *

W. C. Scott, formerly with one of the larger rubber establishments in this city, is now acting in the capacity of traveling salesman for the Gutta Percha & Rubber Manufacturing Co.

* * *

The New Jersey Car Spring & Rubber Co. undertook recently to clean up outstanding accounts, and filed suits in the Superior Court against the Pacific Mill Mine & Supply Co. for \$2,995, and one against the Eccles & Smith Co. for a balance of \$1,481.67, both being for goods sold. After depositions had been taken at the factory, the cases were settled and dismissed.

* * *

The American Rubber Manufacturing Co., the Gutta Percha and Rubber Manufacturing Co., and the Eureka Fire Hose Manufacturing Co., were all successful bidders from whom purchases of hose will be made by the city of Oakland.

* * *

C. C. Case, vice president and general manager of the Revere Rubber Co., spent two weeks in San Francisco and returned, a short time ago; to the East. He seemed well satisfied with the company's arrangements under the new Gorham-Revere Rubber Co., and expressed the belief that there was every opportunity for an immense business to be had on this coast.

* * *

E. H. Parish and J. B. Brady, with the Gorham-Revere Rubber Co., have returned on the *Tenu Maru* to San Francisco, from the Orient, where they have been investigating the rubber business in the Malay States. W. J. Gorham returned on the 8th, after putting the finishing touches to the reorganization work in the Northwest.

* * *

James T. DuBois, United States Consul-General of Singapore, arrived a short time since on the liner *Mongolia*. He states that the rubber production of the Malay archipelago in the next ten years promises to reach fabulous proportions. He also spoke very assuringly of Singapore as a healthful and pleasant place to live in.

* * *

Aboard the liner *America Maru*, from Honolulu which arrived in port recently, were P. Hadow, former lieutenant in the British navy, returning to England on a vacation from the Straits Settlements, where he has been in the rubber business; and T. K. Swain, another rubber operator from the same place.

* * *

The G. & J. Tire Co., branch of the United States Tire Co., are now comfortably located in their fine new quarters on automobile row, at No. 410 Van Ness avenue.

* * *

With their new branches in operation in San Diego, California, Fresno, California, Sacramento, California, Spokane, Washington and Salt Lake City, the Diamond Rubber Co. is now exploiting to the fullest its idea of bringing direct factory service and representatives into close touch with all sections. All adjust-

ments are made in those branches and the tire experts in charge of them are there to give the people the benefit of their experience and to instruct them how to lower tire expense. It doesn't matter what make of tire is used, the managers are instructed to give advice and assistance to all motorists. In the San Francisco store the publicity department is now under the management of A. S. Rhoades, who has taken the place formerly held by Lee Ljams.

* * *

As far as any statistics show, the order for the largest single belt ever made has just been placed with the firm of Squires & Byrne, No. 565 Mission street, by the Leona Chemical Co. of Oakland. It is to be delivered at Melrose, California, for use in the company's quarries near there. The belt, which is the largest in the United States, is 1,490 feet in length; 24 inches wide, 6 ply, and weighs 6½ tons. It stands 9½ feet high.

W. D. Squires, of the Squires & Byrne Co., is expected back shortly from his five weeks' visit to the large rubber manufacturing plants in the East, where he has been particularly looking up new specialties in the machinery line for the engine room, and he will undoubtedly bring home some new ideas, as that has been his usual custom.

* * *

The Inter State Tire Co., at No. 111 Golden Gate avenue, is now looking for a new location.

* * *

W. D. Newerf, now of Los Angeles, has recently been visiting in San Francisco.

THE RUBBER TRADE AT AKRON.

BY A RESIDENT CORRESPONDENT.

THE B. F. Goodrich Co. has recently constructed and is now operating an experimental plant on their property near Exchange street. This consists of three steel buildings, the largest of which is about 100 feet x 150 feet, and is used as a factory building. It has a turret 30 feet x 30 feet which is presumed to be used for a laboratory, a boiler and engine room 40 feet x 50 feet, a mixing and stock room 40 feet x 20 feet, and a building about 35 feet x 50 feet in process of construction.

The Firestone Tire & Rubber Co. has declared quarterly dividends of 1¼ per cent. on preferred and 1¼ per cent. on common stock, payable July 15.

The Toledo Tire and Repair Co., Nos. 241-243 Erie street, Toledo, Ohio, has been given the general agency for the complete line of Firestone rims and tires.

Frank H. Martin, former manager of the Chicago branch of the Firestone Co., has been made special representative, with headquarters at the factory. A. W. Moore succeeds him.

The Firestone Tire and Rubber Co. has bought property at the corner of Commonwealth and Beacon streets, Boston Massachusetts, and will erect a six story building for their exclusive use. They expect to conduct a fully equipped tire establishment and to occupy the same by January 1, 1912.

R. E. Glass, formerly with the Michelin Tire Co., has accepted a position in the auditor's office at the Firestone Co.

The Goodyear Tire and Rubber Co. has asked the city of Akron to vacate two streets which are needed for another large factory building which the company expects to erect before long.

The new building the company is about to erect will be 300 x 60 feet and five stories high.

By a vote of 6 to 3, the municipal council of Akron has passed an ordinance vacating Prune street, in East Akron, to enable the Goodyear Tire & Rubber Co. to build a six-story factory building across the end of it. This long-disputed question has thus been finally decided in favor of the company.

J. A. Swinehart, of Akron, Ohio, bought The Goshen Rubber Works, of Goshen, Indiana, and sold the machinery to various rubber factories and the plant to The Stephenson Underwear Co., of South Bend, Indiana. The report that Mr. Swinehart has interested himself in an Oklahoma rubber company and expects to move to Oklahoma is unfounded.

J. A. Thompkins, formerly of the Detroit branch of the Hartford Rubber Works Co., has taken charge of the Philadelphia branch of the Swinehart Tire and Rubber Co., located at No. 120 Broad street.

W. J. Kruder, formerly of the Goodyear Rubber Co., is now factory superintendent of the Swinehart Tire and Rubber Co.

C. A. Besaw, formerly of the Swinehart Tire and Rubber Co., is now with the Canton Rubber Co.

The Miller Rubber Co. is building another addition, 60 x 150 feet, to their tire department. The company has been running day and night since the first of the year.

The new Diamond electric sign can be seen four or five miles. The company is also placing large signs 40 feet x 45 feet on its Pittsburg and Philadelphia stores.

The Akron plant is carrying one of its 30 feet x 150 feet buildings from two stories to five stories in height.

H. C. Miller, manager of the St. Louis branch, will be identified with the New York Diamond office. He is succeeded by H. E. Larnick, who was formerly with the Pittsburg Rubber and Leather Co.

The Diamond Rubber Co. picnic will be held July 29.

Miniature 4 inch tires made by the Oakland Advertising Co. are being sold broadcast as souvenirs of Akron.

Various rubber companies have sent notices to the tire agents and dealers guaranteeing to them no change in the price of tires before August 31, and if there should be a reduction they agree to rebate the difference between the present and the reduced price in favor of the dealer.

The item in a recent number of THE INDIA RUBBER WORLD from Setauket, Long Island, which claims to be a strong competitor of Akron as a rubber center, we do not understand, but nevertheless, with charity for all, we wish them infinite success, a fair division of the profits, happy homes, and a spirit free from envy, covetousness and jealousy.

Jones & Kuhlke, manufacturers of drums and rolls, have trebled the size of their plant within the last three years.

Glenn Curtiss, of hydro-aeroplane fame, recently spent a week in Akron. The rubber and fabric parts of his aeroplane are being made by Akron factories, and he spent some time inspecting them.

Patrick Kelly, State Automobile License Inspector of Ohio, reports 1,500 automobiles for Akron, or one automobile for every nine families.

S. E. Allen, chemist, Akron, Ohio, has a new process of devulcanizing rubber, which he claims will cost the factory but one-fifth of the cost of crude rubber and that a firm having it can put the price of goods so low that a company not having it would suffer greatly. It is said that he claims to have sold the secret to the "rubber trust" for \$400,000.

THE ASSOCIACAO COMMERCIAL DO AMAZONAS have sent twenty-five tons of their best rubber to the International Rubber Exhibition in London. Messrs. W. Stuart Gordon (Gordon & Co., Manaus), and Emil Zarges (Dusendschön, Zarges & Co., Manaus), are appointed a special committee to go to the exhibition and report to the association on their return. They journeyed by way of New York and will probably return direct.

A book for rubber planters. Mr. Pearson's "Rubber Country of the Amazon."

News of the American Rubber Trade.

FROM AKRON TO EUROPE BY BALLOON.

F. A. SEIBERLING, president of The Goodyear Tire and Rubber Co., and of the Akron Chamber of Commerce, is financing a trans-Atlantic dirigible balloon expedition for Melville Vaniman. Mr. Seiberling says the balloon will be made in Akron of Goodyear balloon fabric and will be 268 feet in length by 60 feet in diameter. The propellers will be driven by a 250 h. p. engine. The balloon will carry six passengers besides lifeboats, food, gasoline, and other supplies. It will be finished some time in August. Practically all the instruments have been made by Mr. Vaniman himself, and he will have complete charge of every detail of the expedition. Mr. Vaniman is now in Akron pushing the completion of the details for the expedition. Mr. Seiberling says that he is financing the expedition because he thinks "it will be of great scientific and practical value to the government and to the work of conquering the air."

Glen Curtiss, when asked last week what chance a balloon had of crossing the ocean, is quoted as saying "that it could be done," and that "it depends on the knowledge of the balloon man, on the air currents and everything about air travel for a man to be successful, but I believe that a dirigible balloon, properly handled, will accomplish it. Luck will have a large part in making the trip. If the right air currents are met, it can be done; if not, it is doubtful. The large amount of provisions and other supplies that are necessary is a great hindrance, and the less there is on board the better chance to be successful."

MID-SUMMER OUTING OF THE RUBBER CLUB OF AMERICA.

The executive committee of The Rubber Club of America have decided to hold the mid-summer outing this year on Friday, July 7.

Those interested in golfing will have the freedom of the "Sporty" links, Woodland Golf Club, at Auburndale, in the forenoon. For the afternoon there have been arranged a very interesting harbor trip and baseball game which, it is claimed, will be held between two clubs named "North American Rubber" and "Uncle Sam," dressed in costume. Quite a number of sports, new and interesting, have also been planned.

Members of the club are familiar with Point Shirley and its unapproachable shore dinners, they have not however seen or enjoyed the new club house. To give them both of these opportunities therefore the end of the harbor trip will be at Point Shirley Pier, and the dinner will be in the new banquet hall. Those who are in doubt as to time and place of starting, trains to Point Shirley (in case one misses the boat), etc., are referred to Mr. F. D. Balderston, secretary, No. 140 Essex street, Boston.

Coming earlier than usual, it is expected that a very large attendance will result and that, as always planned in the past, the last outing will be the best.

AMAX—"MEDIUM" AND "HARD."

THERE IS ALWAYS a bit of genius shown in the creation of a good trade-mark. To be perfect it should be easy to pronounce, impossible to forget, attractive to eye and ear, in fact completely euphonic. Such is Amax. One cannot forget it, or confuse it with any other. If the hydrocarbon "Medium" and "Hard" that it represents are equally good and the producers affirm that such is the case, the rubber manufacturers of the world will long be indebted to the American Wax Co., of Boston, Mass., creators of both product and trade-mark.

INTERNATIONAL RUBBER CO.—DIVIDEND.

A regular quarterly dividend of 13½ per cent. on the preferred stock, payable June 30, and a 1 per cent. dividend on the common stock, payable August 1, have been declared by the above company.

ASSISTANT TREASURER OF THE UNITED STATES.

News comes from Cincinnati, Ohio, that a well-known member of the rubber trade, George Puchta, has been appointed Assistant Treasurer of the United States. Mr. Puchta, some years ago, as senior member of the firm of Puchta & Pund, secured the agency of the Boston Belting Co., which was continued when his firm became a corporation known as the Queen City Supply



GEORGE PUCHTA.

Co. Through his rubber connection, Mr. Puchta became very well known to the Eastern manufacturers. He was a frequent visitor to New York, where his ability as a business man was instantly recognized. Incidentally, and perhaps this should not be cited now that he holds so dignified an official position, he is the owner of a collection of the drollest anecdotes of any man this side of the Rockies and tells them inimitably. It is said that it will take the treasury officials a week to count the government money in the Sub-Treasury preparatory to turning it over to Mr. Puchta—and we formerly called him George!

NEW JERSEY CORPORATIONS SUSPENDED.

ACTING on a report from the State Comptroller in regard to their non-payment of State taxes for the year 1908, the governor of New Jersey proclaims the repeal of the charters of the following named corporations, the titles of which indicate their connection with the rubber interest. In some instances these corporations have been reorganized under other titles and the charters issued under the names listed have been voluntarily abandoned:

Amazon Rubber Co., Antioak Tire Co., Atlantic Rubber Manufacturing Co., Atlantida Banana and Rubber Co., Bar Lock Rubber Tire Co., Bowly Auto-Pneumatic Tire Co., Bristletite Brush and Rubber Co., British Guiana Rubber Plantations Co., Congo-Brazilian Crude Rubber Co., Coomber Rubber Manufacturing Co., Delta Rubber Co., Electric Rubber Co., Hardman Rubber Co., International Rice and Rubber Co., New Jersey Antioak Tire Co., Phoenix Rubber Co., Pneumatic Ball Tire Co., Prudential Rubber Co., Rubber Tire Co., Standard Pneumatic Wheel Co., Steel Cushion Tire and Manufacturing Co., William H. Skirm Rubber Manufacturing Co.

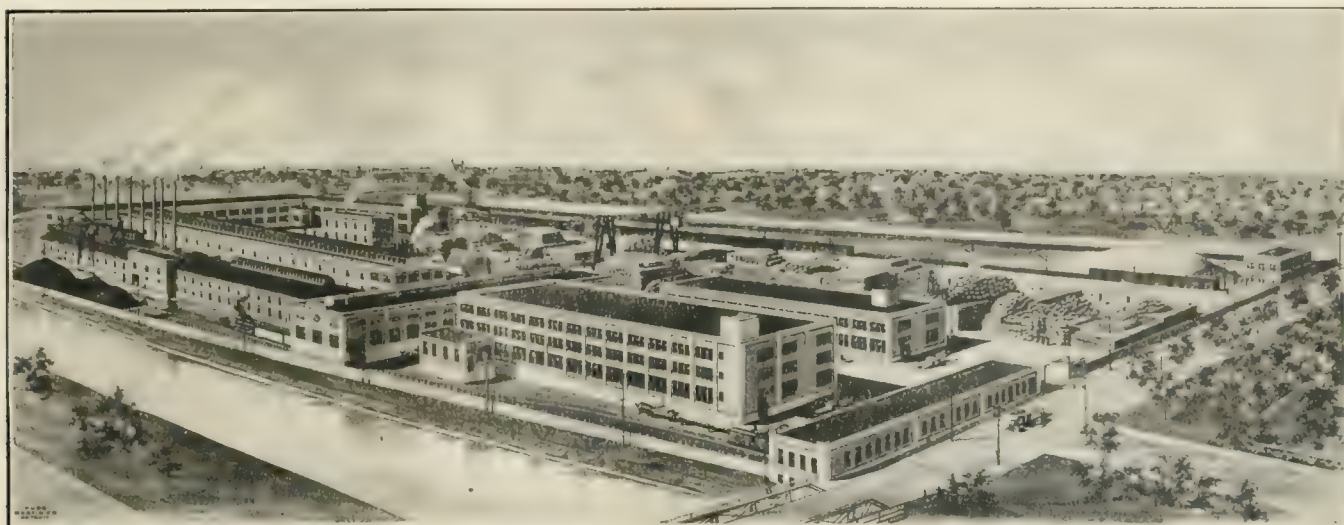
IMPORTANT RECLAIMERS CONSOLIDATE.

The Alkali Rubber Co., of Akron, has been consolidated with the Philadelphia Rubber Works of Philadelphia, Pa. The new company will be known as The Philadelphia Rubber Works Co., and is capitalized at \$2,500,000. The officers are: J. K. Mitchell, Philadelphia, president; J. S. Lowman, Akron, vice-president;

various tire factories, whose output the tire company controls; the rims by the United Rim Co., Akron, Ohio.

TRADE NEWS NOTES.

Reports that were circulated in London that the United States Rubber Co. had bought 1,000 tons of Brazilian rubber and was



THE PHILADELPHIA RUBBER WORKS CO., AKRON (OHIO) DIVISION

E. M. Mundy, Philadelphia, treasurer; F. M. Schwab, Philadelphia, secretary. There will be no change in the running of either plant, they will continue the same as formerly, the merger being made because the Philadelphia plant uses the acid method of reclaiming rubber, while the Akron plant uses the alkali method. As there are some kinds of rubber that are more easily treated by one method than another, the companies have united for mutual benefit. The Akron plant will be known as the Akron Division and the Philadelphia plant as the Philadelphia Division of the Philadelphia Rubber Works Co. The offices are located at 906 Land Title building, Philadelphia, Pa.

offering to purchase 2,000 tons additional, is denied by the officials of the General Rubber Co., who purchase for the company named.

THE Syracuse Rubber Co. "Howletts Rubber Store" are pushing their own special brand of "Old Elm" sporting and hip rubber boots, the real old-fashioned "pure gum boots."

Swinehart tires for the first time in their experience formed part of the racing equipment of an automobile on the occasion of a race-meet on the Hawthorne track, near Chicago. The car that rode on them took part in a five-mile event and came in a winner.

The Metallic Flexible Tubing Co., Philadelphia, announce



THE PHILADELPHIA RUBBER WORKS CO., PHILADELPHIA (PA.) DIVISION.

A RECORD ORDER FOR TIRES.

A SINGLE order recently received by the United States Tire Co. (New York) calls for 135,000 pneumatic tires and a like number of Continental Gilbert type quick detachable demountable rims, for the equipment of "E. M. F. 30" automobiles, manufactured by the Studebaker corporation. The tires will be supplied by the

that they have relinquished their interest in the manufacture of this class of goods and have transferred their patent rights, machinery, stock and fixtures to the Mulconroy Co., Inc., of that city, who, as established manufacturers of flexible metallic hose and tubing, will continue their production under the name and registered brands of the Metallic Flexible Tubing Co.

UNITED STATES RUBBER CO.'S ISSUES.

For the year ending June 30, 1911, New York Stock Exchange for four weeks ending June 24.

COMMON STOCK, \$25,000,000.

Last Dividend, April 29, 1911—1%.				
Week June 3	Sales 2,500 shares	High 41½	Low 40	
Week June 10	Sales 5,100 shares	High 42¼	Low 40½	
Week June 17	Sales 1,300 shares	High 41	Low 40½	
Week June 24	Sales 2,300 shares	High 41¼	Low 40½	
For the year—High, 47½, March 1; Low, 36, January 6.				
Last year—High, 47½, March 1; Low, 37, January 6.				

FIRST PREFERRED STOCK, \$39,824,400.

Last Dividend, April 29, 1911—1%.				
Week June 3	Sales 100 shares	High 113½	Low 113½	
Week June 10	Sales 425 shares	High 113½	Low 113½	
Week June 17	Sales 300 shares	High 114	Low 113½	
Week June 24	Sales ... shares	High ...	Low ...	

For the year—High, 114½, April 10; Low, 109½, January 18.

Last year—High, 116½; Low, 99.

SECOND PREFERRED STOCK, \$9,965,000.

Last Dividend, April 29, 1911—1½%.				
Week June 3	Sales 325 shares	High 77	Low 76½	
Week June 10	Sales 300 shares	High 77½	Low 77	
Week June 17	Sales 200 shares	High 77	Low 77	
Week June 24	Sales 15 shares	High 77	Low 77	

For the year—High, 79, March 1; Low, 72½, January 31.

Last year—High, 84; Low, 59½.

SIX PER CENT. TRUST GOLD BONDS, \$19,000,000.

Outstanding of the 1908 issue of \$20,000,000.				
Week June 3	Sales 30 bonds	High 104½	Low 104¼	
Week June 10	Sales 26 bonds	High 104¾	Low 104½	
Week June 17	Sales 77 bonds	High 105	Low 104½	
Week June 24	Sales 23 bonds	High 105	Low 104¾	

For the year—High, 105, June 24; Low, 102¾, March 5.

Last year—High, 100; Low, 102¼.

GOODYEAR RELIEF ASSOCIATION OUTING.

BETWEEN four and five thousand strong, the members of the Goodyear Relief Association, consisting of employes of the Goodyear Tire and Rubber Co. (Akron, Ohio), and their friends, took part in the annual outing of that organization, held at Myers' Lake Park, Canton, on June 10. An attractive programme of sports, for which prizes to the value of \$1,100 were offered, had been arranged, the dancing pavilion was thrown open free to the excursionists, and the band of the Eighth Regiment, Ohio National Guard (McKinley's Own) accompanied the excursion to furnish music. It was, as usual, a well-managed affair and a genuine good time was enjoyed by all present.

The sports in which the members participated, included:

Ball game; Goodyear vs. Buckeye, prize..... \$25

Ball game; Married vs. Single, prize..... 15

Bowling contest; women vs. men, prizes, pair of opera glasses and rubber coat.

Tug of war; Married vs. Single men, prize..... 10

There were in addition, a number of dashes of 50, 75 and 100 yards, as well as other competitive events.

The Goodyear Relief Association, which was organized in 1909, has a membership of 1,100; and a balance of \$3,355.60 in its treasury. It is entirely a factory affair, no officer of the Goodyear Tire and Rubber Co. having any part in its management.

MEXICAN CRUDE RUBBER CO.—DIVIDEND.

The Mexican Crude Rubber Co., producers of crude rubber, recently declared a dividend of three per cent. on its outstanding stock, for the month of May.

ERRATUM.

By a typographical error it was stated in the advertisement of the Hoffman-Ahlers Co. in the June issue of THE INDIA RUBBER WORLD that 90 per cent. recovery was guaranteed on acetone. This should have been 99 per cent., as the percentage of loss is always less than 1 per cent.

NEW INCORPORATIONS.

BRAINTREE RUBBER CEMENT Co., June 2, 1911, under the laws of Massachusetts; authorized capital, \$12,000. Incorporators: William A. Daggett, Boston, Massachusetts; James T. Stevens, George W. Stevens and Alberta M. McLellan, all of South Braintree, Massachusetts. The company has been incorporated to deal in dressings, polishes, blacking, stains, etc., for shoes, etc.

Connecticut Rubber Co., June 12, 1911, under the laws of Connecticut; authorized capital, \$250,000. Incorporators: William J. Burns, Louis F. Nutting and William L. McEwen, all of Bridgeport, Conn.

Diamond State Rubber Co., May 20, 1911, under the laws of Delaware; authorized capital, \$1,000,000. Incorporators: Peter V. Guerry, Newton, Pennsylvania; Steven P. Phillips, Philadelphia, Pennsylvania; John W. Huxley, Jr., Wilmington, Delaware, and Jeannot W. Kenevel, Philadelphia, Pennsylvania.

D. & S. Airless Tire Co., May 13, 1911, under the laws of Delaware; authorized capital, \$1,000,000. Incorporators: F. M. Shive, S. E. Roberson and Harry W. Davis, all of Wilmington, Delaware. To manufacture, buy, sell, trade and deal in and with automobile tires and accessories, etc.

Guiana Timber and Rubber Co., June 15, 1911, under the laws of New York; authorized capital, \$10,000. Incorporators: Frederick L. Temple, No. 1 Liberty street; P. C. Kiesel, No. 71 Wall street, and Joseph Weintraub, No. 70 Wall street—all of New York. Location of principal office, Manhattan. The company was incorporated to cultivate rubber.

Knight Tire and Rubber Co., May 12, 1911, under the laws of Ohio; authorized capital, \$300,000. Incorporators: G. F. Knight, H. C. Evans, C. H. Knight, W. S. Cunningham and M. J. Shea. To manufacture, sell and deal in pneumatic and solid tires and all kinds of rubber goods.

The Pneumatic Suspension Wheel Co., May 13, 1911, under the laws of New York; authorized capital, \$250,000. Incorporators: Henry H. Melville, No. 37 Wall street, New York; Frank N. Morley, No. 308 Sears building, Boston, Massachusetts; Charles W. Miller, No. 49 Broadway, New York. Location of principal office, New York.

Punctureless Tire Co. of Missouri, May 29, 1911, under the laws of Missouri; authorized capital, \$2,000. Incorporators: Hans Dahl, F. J. Iuen, A. W. Farrar and C. A. Blomquist—all of Kansas City, Missouri. Location of principal office, Kansas City, Missouri. To manufacture, buy, sell and repair automobile and vehicle tires, rims, etc.

Revere Rubber Co., May 24, 1911. Under the laws of Illinois; authorized capital, \$4,000,000. Incorporators: Walter S. Ballou, Cumberland; Clarence H. Guild, Providence, and James Harris, Smithfield—all of Rhode Island. To manufacture and deal in rubber tires, rubber thread, etc.

Selbach Rubber Co., April 4, 1911, under the laws of Massachusetts; authorized capital, \$5,000. Incorporators: Donald B. Smith, Nettie T. Smith—both of Norwood, Massachusetts; John O. Caldwell, Jr., Margaret Caldwell—both of Winthrop, Massachusetts. To engage in the rubber business and anything pertaining thereto.

Suspension Tire Co., May 17, 1911, under the laws of Delaware; authorized capital, \$500,000. Incorporators: Robert G. Grigg, Merchantville, New Jersey; Charles A. Walter, Philadelphia, Pennsylvania, and D. C. Pennypacker, Philadelphia, Pennsylvania.

Western Tire Co., March 28, 1911, under the laws of Washington; authorized capital, \$100,000. Incorporators: E. H. Fogerty and F. V. Fox. To repair and deal in tires, etc.

CONVERSE RUBBER SHOE CO.—DIVIDEND.

A semi annual dividend of 3½ per cent. was paid by the above company to holders of its preferred stock on June 15.

TRADE NEWS NOTES.

The Republic Rubber Co. (Youngstown, Ohio) have nearly completed a new machine shop that will be an important addition to their plant. It is a fireproof structure, 72 x 136 feet, an interior balcony for patterns and general storage, giving it the capacity of a two story structure.

The Standard Rubber and Cable Co. (New York) announce that J. H. Simms, formerly sales manager of the Rutherford Rubber Co., and secretary of the Pearsall-Traver Manufacturing Co., has been placed in charge of their sales department.

United States Tire Co. (New York) have opened a branch in Detroit, Mich., at 245 Jefferson avenue East. H. C. Severance is in charge.

The Des Moines Rubberette and Vulcanizing Co. is the title of a new corporation, established in Des Moines, Iowa, for the purpose of so treating the inner tubes of tires as to make them puncture proof. The Rubberette tire protection, which the manufacturers claim to be a preparation of Pará rubber, is vulcanized to the tread of the inner tube on the inside of the tube, giving treads of different thicknesses, according to the size of the tube used. It is claimed that a tire treated with Rubberette, which is injected into the tube and distributed by machinery, is impregnable to puncture, that strength and durability are added to the tires and blowouts lessened eighty per cent., and that resiliency is in no way affected.

At the fifth annual work horse parade, recently held in New York, at which there were nearly 2,000 entries, the first prize went to a driver for the American Hard Rubber Co., Robert Broddick, who has been in the company's service thirty-one years, and has driven "Sargeant," the horse that shared with him the highest distinction in the parade, for ten years.

The Fisk Rubber Co. (Chicopee Falls, Massachusetts), have opened a branch at the corner of I and Tuolumne streets, Fresno, California. It is in charge of R. G. Macphail, and is not only stocked with a full supply of the Fisk tires and rims, but has a well-equipped repair department, so that customers may have direct factory service. The company has opened a similar establishment at 1310 K street, Sacramento, California, making 30 direct factory service branches operated by them in various parts of the country, besides their numerous sales depots and agencies. The Fisk bolted-on tire and removable rim, was the outfit with which the Glidden pathfinding car was equipped for its recent trip from Washington, D. C., to Ottawa, Canada.

Rubber footwear jobbers are beginning to send in their details in considerable volume. The footwear trade has been inclined to hold off in the matter of orders under the hope that with the lower prices of crude rubber now prevailing the price of manufactured goods would be likely to drop, but they have concluded that there will be no decrease for the present season, and are now hurrying in their orders.

Alexander Astley, formerly in charge of the weaving department of the Boston Woven Hose and Rubber Co., Chiltonville, Massachusetts, has been made superintendent of the company's reclaiming plant at that place, to succeed Robert Harlow, who is now president of the Monaquot Rubber Co., South Braintree, Massachusetts.

The Plymouth Rubber Co. (Stoughton, Massachusetts), to complete their plant at Canton, are erecting a three-story, mill-construction building, 200 x 100 feet, on Revere street, which they expect will shortly be ready for their occupancy.

The Consolidated Rubber Tire Co. (New York), have opened a branch office at Cleveland, Ohio. It is located at No. 1846 Euclid avenue, and under the management of Otis R. Cook, is doing a thriving business. The company's San Francisco branch has removed into new quarters at 489 Golden Gate avenue, where they will handle a complete line of Kelly-Springfield automobile tires.

A UNIQUE EXCURSION.

A number of the salesmen and heads of departments of the Boston Woven Hose and Rubber Co., Boston, Mass., recently enjoyed a novel outing. A new Packard truck, of large capacity, delivered to the company a few days before, was fitted up with seats, after the manner of a sight seeing auto, and the party, twenty-two in number, rode to the Dedham Country Club, where General Manager George E. Hall had arranged for a dinner. Among the salesmen present were Joseph E. Selby, manager of the company's Pacific Coast Branch; Messrs. Clifford and Ring from the west, Davis of Chicago and Owens of New York. Two days later the party, in automobiles, went to Plymouth by the middle road and after visiting the company's plant re-



ALL ABOARD FOR THE "DEDHAM COUNTRY CLUB."

turned to Boston by the shore road, passing through Danbury, Marshfield, Cohasset and Hingham. Our illustration shows the big Packard with its cheerful load.

THE VULCAN PROOFING CO.

THE Vulcan Proofing Co., mentioned briefly in the June INDIA RUBBER WORLD under new incorporations, really merits more attention. The company having W. A. Walker, of the J. Mandelberg Co., as president, and George Kenyon of the C. Kenyon Co., as secretary-treasurer, points to quite a development in Anglo-American proofing. Mandelberg, as is well known, is perhaps the largest proofer in Europe and makes a wonderful line of goods. The Kenyons have for a long time been active in rain proof garments and have done a very large business. Within the last two years they have also engaged quite extensively in the manufacture of rubberized cloth.

CANADIAN MINERAL RUBBER CO., LTD.—ANNUAL REPORT.

In his report, covering the company's business for the year ending December 31, 1909, President D. B. Hanna refers to a large increase in sales over the preceding year. Substantial additions have also been made to the plant. The company's earnings are reported as amounting to \$130,178.51, from which, after paying \$49,013.42 interest on the debenture stock and adding \$60,000 to the reserve account, \$21,165.09 has been carried forward to next year's account.

NEW RUBBER LABORATORY IN BOSTON.

Dr. L. E. Weber, son of the late Carl Otto Weber, will open a laboratory for general consultation in rubber lines in Boston some time this summer. Dr. Weber is an exceedingly brilliant young chemist, and comes to the United States after having secured his degrees in Germany and working for some time under Dr. Fritz Frank, the notable German rubber chemist in Berlin.

PERSONAL MENTION.

JAMES P. KROGH, treasurer of the Hartford Rubber Works Co., was married, on May 31, at Greenfield, Mass., to Miss Elizabeth Jean Greenough, of Deerfield, Mass., the ceremony being performed on the lawn of Hillcrest, the bride's family home. On their return from a brief wedding tour the young couple took up their residence in Hartford.

Colonel Samuel P. Colt, president of the United States Rubber Co., recently took a party of his friends, including his brother, Judge LeBaron Colt, and Walter S. Ballou, president of the Banigan Company, to his fishing camp near Norcross, Maine, where they remained for ten days. The report is that it was a very successful outing, both as regards the number of fish caught and in all other respects.

Fred. H. Sanford, of A. H. Alden & Co., Limited, another of the crude rubber men in Manaos, is now in London and will attend the exhibition.

William F. Bass, vice-president of the General Rubber Co. (New York), is the able and enthusiastic manager of the lacrosse team of the Crescent Athletic Club of Brooklyn, New York. Quite recently this club played the Canadian Club, and incidentally whipped them, the score being 6 to 3. President Taft was the notable guest of the club on that occasion.

Thomas Martin, of T. Martin & Sons, Chelsea, Mass., has just returned from England, completing his eightieth trip across the Atlantic. It is fifty years since he made his first trip and he is

believed to hold the record in the United States for the number of trips across the big pond.

Parker T. Marean has resigned as superintendent of the B. & R. Rubber Co., North Brookfield, Mass., and will remove to Boston, where he has property and intends to take up his residence.

Henry Martine, manager of the Gutta Percha & Rubber Mfg. Co., Alameda, Elk, Cal., invested a dollar in a lottery ticket which he lost before the drawing took place, supposedly while cranking his auto. For another fifty cents he purchased another half ticket, which was all the ticket seller had left, and his half ticket won him \$500. Now he is said to contemplate suing the ticket vendor for \$500 because of his failure to sell him the whole ticket, which would have netted him \$1,000.

TRADE NEWS NOTES.

La Favorite Rubber Manufacturing Company (Paterson, New Jersey), inform THE INDIA RUBBER WORLD that they are about to bring suit for the infringement of their Patented "Marvel Lip Packing," for which they have patents Nos. 631,661 and 943,692.

The new owners of the Federal Rubber Manufacturing Co., Milwaukee, Wisconsin, took over the business July 1. The engineers and contractors are rushing the additions to the plant, which are as follows: Administration building, 50 x 70, three stories; rubber washing and drying building, 35 x 160, two stories; addition for the purpose of auto tire construction, 40 x 100, three stories; machine shop, 40 x 100, one story; rebuilding and installation of new machines in reclaiming plant.

Review of the Crude Rubber Market.

THE important rubber manufacturing companies the world over have been practically out of the market for Pará sorts for the month past. The result has been a steady accumulation of stocks of fine, together with slightly receding prices from day to day. As we go to press July-August deliveries in London were offered at 96 cents, but little interest was shown on the part of buyers. The last six months, with their steady decline in the price of crude rubber and the lack of buying, may be regarded as the rubber manufacturers' protest against valorization, and their ability to check any present attempt to resurrect the \$3 price that they were obliged to pay but a short time ago.

Based on eleven months' returns, the Bureau of Statistics shows in a statement just given out that the value of crude rubber imports to the end of May was \$71,700,000, as compared with \$95,500,000 for the corresponding period of the fiscal year 1910. In explanation of this reduction, it is remarked that there has been a heavy fall since last year; it being thus apparently implied that quantity has been more or less kept up, while value has fallen.

Such a contention is, however, not borne out by a comparison of the weights in connection with the values. Exact figures show that for the eleven months ending May 31, 1911, the imports were 65,723,492 pounds, valued at \$71,736,522 (or an average of \$1.09 per pound), as compared with 95,543,289 pounds valued at \$95,464,873 (or an average of \$1 per pound) for the corresponding eleven months of the fiscal year 1910.

Thus, the drop of 25 per cent. in the amount of rubber imports corresponds, on the last basis recorded in detail, with a reduction of more than 30 per cent. in quantity. In fact, we have been importing less rubber, and at a higher average cost, rather than paying a lower average shipping price. With diminished receipts the statistical position is improved.

PARÁ ARRIVALS.

In contrast with the increase of 1,000 tons shown by the figures of the crop year 1909-10, as compared with those of 1908-9, the quantity for 1910-11 is about 2,000 tons short of that recorded for the preceding annual period, as shown by the following table:

	1907-8.	1908-9.	1909-10.	1910-11.
July	1,370	1,300	1,400	2,340
August to November..	10,310	11,135	11,795	10,810
December	2,560	3,300	3,510	2,640
January	4,860	5,480	5,490	4,130
February	5,340	5,040	4,760	5,795
March	4,240	4,140	5,210	3,540
April	3,100	3,760	3,600	3,490
May	3,210	2,340	2,170	3,060
June	1,660	1,570	1,230	21,503
Total crop year.tons	36,650	38,065	39,165	37,308

[a To and including June 28, 1911.]

From the above table it will be seen that the reduction in Pará arrivals has practically taken place since November last. At the close of that month, the total figure stood at 13,150 tons, as compared with 13,195 tons up to the end of November, 1909. The subsequent falling off to the extent of about 2,000 tons, practically represents the shortages of December, January and March, aggregating 4,000 tons, partially offset by the total surplus of about 2,000 tons, shown for February and May.

The steady growth of Pará arrivals is shown by the following comparison of returns for recent years:

1900-01.....tons	27,610	1906-07.....tons	38,005
1901-02.....	30,000	1907-08.....	36,650
1902-03.....	29,850	1908-09.....	38,065
1903-04.....	36,580	1909-10.....	39,165
1904-05.....	33,060	1910-11.....	37,308
1905-1906.....	34,490		

[a To and including June 28, 1911.]

NEW YORK QUOTATIONS.

FOLLOWING are the quotations at New York for Para grades, one year ago, one month ago, and June 30—the current date:

PARA.	July 1, '10.	June 1, '11.	June 30, '11.
Islands, fine, new.....	225@226	96@ 97	92@ 93
Islands, fine, old.....	227@228	98@100	94@ 95
Upriver, fine new.....	238@239	99@100	97@ 98
Upriver, fine, old.....	240@241	105@106	101@102
Islands, coarse, new.....	104@105	58@ 59	58@ 59
Islands, coarse, old.....	none here	none here	none here
Upriver, coarse, new.....	159@160	82@ 83	81@ 82
Upriver, coarse, old.....	160@161	84@ 85	83@ 84
Cameta.....	120@121	60@ 61	64@ 65
Caucho (Peruvian), ball.....	153@154	84@ 85	80@ 81
Caucho (Peruvian), sheet.....	none here	66@ 67	62@ 63

PLANTATION PARA.

Fine smoked sheet.....	—@227	none here	114@115
Fine pale crepe.....	@225	114@115	113@114
Fine sheets and biscuits.....	—@220	none here	110@111

CENTRALS.

Esmeralda, sausage.....	131@132	78@ 79	77@ 78
Guayaquil, strip.....	none here	none here	none here
Nicaragua, scrap.....	126@127	77@ 78	77@ 78
Panama.....	90@ 91	none here	none here
Mexican, scrap.....	126@127	77@ 78	75@ 76
Mexican, slab.....	none here	none here	none here
Mangaberia, sheet.....	none here	none here	none here
Guayule.....	94@ 95	48@ 49	43@ 44
Balata, sheet.....	—@ —	none here	none here
Balata, block.....	—@ —	none here	none here

AFRICAN.

Lopori, ball, prime.....	none here	95@ 96	92@ 93
Lopori, strip, prime.....	197@198	none here	none here
Aruwimi.....	none here	94@ 95	87@ 88
Upper Congo, ball, red.....	none here	95@ 96	89@ 90
Ikelemba.....	none here	none here	none here
Sierra Leone, 1st quality.....	167@168	85@ 86	84@ 85
Massai, red.....	167@168	85@ 86	84@ 85
Soudan Niggers.....	none here	none here	none here
Cameroon, ball.....	none here	56@ 57	58@ 59
Benguella.....	none here	65@ 66	64@ 65
Madagascar, pinky.....	none here	77@ 78	75@ 76
Accra flake.....	none here	27@ 28	25@ 26

EAST INDIAN.

Assam.....	133@135	83@ 84	78@ 79
Pontianak.....	71@ 8	6@ 6 1/8	6 1/8@ 6 1/4
Borneo.....	none here	none here	none here

Late Para cables quote:

	Per Kilo.		Per Kilo.
Islands, fine.....	3\$950	Upriver, fine.....	4\$900
Islands, coarse.....	2\$150	Upriver, coarse.....	3\$800
		Exchange.....	16 5-32d.

Latest Manáos advices:

Upriver, fine.....	5\$000	Exchange.....	16 3-16d.
Upriver, coarse.....	3\$200		

New York.

IN regard to the financial situation, Albert B. Beers (broker in crude rubber and commercial paper, No. 68 William street, New York), advises as follows: "The market for commercial paper remains the same as reported a month ago, there having been a good demand through June for the best rubber names at 4@4 1/2 per cent., and those not so well known 5@5 1/2 per cent."

NEW YORK PRICES FOR APRIL (NEW RUBBER).

Upriver, fine.....	\$1.18 @ 1.35	\$2.58 @ 2.92	\$1.21 @ 1.26
Upriver, coarse.....	.88 @ 1.10	1.70 @ 1.87	.92 @ .96
Islands, fine.....	1.12 @ 1.35	2.45 @ 2.78	1.18 @ 1.23
Islands, coarse.....	.60 @ .63	1.07 @ 1.15	.56 @ .59
Cameta.....	.75 @ .80	1.28 @ 1.35	.63 @ .69

NEW YORK PRICES FOR MAY (NEW RUBBER).

Upriver, fine.....	\$0.93 @ 1.28	\$2.35 @ 2.80	\$1.26 @ 1.35
Upriver, coarse.....	.82 @ .89	1.60 @ 1.82	.96 @ .98
Islands, fine.....	.92 @ 1.22	2.26 @ 2.72	1.23 @ 1.31
Islands, coarse.....	.58 @ .67	.93 @ 1.09	.59 @ .67
Cameta.....	.67 @ .76	1.10 @ 1.27	.69 @ .78

African Rubbers.

NEW YORK STOCKS (IN TONS).

May 1, 1910.....	125	December 1, 1910.....	140
June 1.....	90	January 1, 1911.....	115
July 1.....	120	February 1.....	115
August 1.....	250	March 1.....	111
September 1.....	300	April 1.....	98
October 1.....	375	May 1.....	98
November 1.....	100	June 1.....	90

Statistics of Para Rubber (Excluding Caucho).

	NEW YORK.			PARA.		ENGLAND.	
	Fine and Medium.	Coarse.		1911.	1910.	1911.	1910.
Stocks, April 30.....	440	121 =	561	1,470	1,100	720	
Arrivals, May.....	520	389 =	909	1,340	1,370	817	1,308
Aggregating.....	960	510 =	1,470	2,305	2,287	2,408	1,550
Deliveries, May.....	660	450 =	1,119	925	1,750	362	858
Stocks, May 31.....	291	60 =	351	675	555	1,925	1,550

World's visible supply, May 31.....	7,408	2,871	2,367
Para receipts, July 1 to May 31.....	29,200	30,570	29,040
Para receipts of caucho, same dates.....	6,800	7,380	7,540
Afloat from Para to United States, May 31.....	347	60	481
Afloat from Para to Europe, May 31.....	580	480	542

Rubber Scrap Prices.

LATE NEW YORK quotations—prices paid by consumers for carload lots, per pound—show a slight decline since last month.

	June 1.	July 1.
Old rubber boots and shoes—domestic.....	9 3/4 @ 9 1/2	8 7/8 @ 9
Old rubber boots and shoes—foreign.....	9 1/4 @ 9 3/8	9 @ 9 1/8
Pneumatic bicycle tires.....	4 1/2 @ 4 3/4	4 1/2 @ 4 3/4
Automobile tires.....	8 7/8 @ 9 1/8	8 3/8 @ 8 1/2
Solid rubber wagon and carriage tires.....	9 1/2 @ 10	9 1/4 @ 9 3/4
White trimmed rubber.....	11 @ 11 1/2	11 @ 11 1/2
Heavy black rubber.....	4 3/4 @ 5 1/4	4 3/4 @ 5
Air brake hose.....	4 3/4 @ 5	4 1/2 @ 4 3/4
Garden hose.....	2 @ 2 1/4	1 3/4 @ 1 7/8
Fire and large hose.....	2 1/2 @ 2 3/4	2 3/8 @ 2 5/8
Matting.....	1 @ 1 1/8	7/8 @ 1

IMPORTS FROM PARA AT NEW YORK.

The Figures Indicate Weight in Pounds.

MAY 25.—By the steamer *Cearense*, from Manáos and Pará:

	Fine.	Medium.	Coarse.	Caucho.	Total.
Poel & Arnold.....	128,100	16,600	75,100	25,900	245,700
New York Commercial Co.....	62,400	13,000	118,700	32,400	226,500
Henderson & Korn.....	56,600	1,300	11,600	400	69,900
Hagemeyer & Brunn.....	21,400		9,900		31,300
De Lagotellerie & Co.....	7,100	1,800	14,500	6,600	30,000
Laurence Johnson & Co.....			400	5,300	5,700
G. Amsinck & Co.....			300	4,300	4,600
Total.....	275,600	32,700	230,500	74,900	613,700

JUNE 5.—By the steamer *Cuthbert*, from Manáos and Pará:

Poel & Arnold.....	68,400	40,400	125,900	700	235,400
New York Commercial Co.....	69,200	18,600	48,400		136,200
De Lagotellerie & Co.....	22,800	5,300	11,900		40,000
Hagemeyer & Brunn.....	17,900	300	4,600		22,800
Total.....	178,300	64,600	190,800		433,700

JUNE 10.—By the steamer *Sao Paulo*, from Pará:

Poel & Arnold.....	54,200	13,300	72,700	4,600	144,800
New York Commercial Co.....	45,300	9,900	29,400		84,600
G. Amsinck & Co.....	5,800	300	57,400		63,500
Hagemeyer & Brunn.....	2,500	400	10,500		13,400
Total.....	107,800	23,900	170,000		301,700

JUNE 16.—By the steamer *Dominic*, from Manáos and Pará:

Poel & Arnold.....	166,300	33,900	97,200	65,700	363,100
New York Commercial Co.....	95,600	19,400	34,800	46,500	196,300
De Lagotellerie & Co.....	6,100	6,400	10,600		23,100
Hagemeyer & Brunn.....	5,300		2,600		7,900
Total.....	273,300	59,700	145,200	112,200	590,400

JUNE 22. By the steamer *Clement*, from Manáos and Pará:

Poel & Arnold.....	194,600	40,600	123,600	51,000	409,800
New York Commercial Co.....	81,000	13,600	47,400		142,000
Hagemeyer & Brunn.....	5,000		48,000		53,000
De Lagotellerie & Co.....	20,700	3,000	6,600		30,300
General Rubber Co.....				3,600	3,600
Total.....	301,300	57,400	225,600	97,300	681,600

PARA RUBBER VIA EUROPE.

May 1.—By the <i>Caronia</i> =Liverpool:		
N. Y. Commercial Co. (Fine).....	190,000	
JUNE 1.—By the <i>Coppename</i> =Bolivar:		
Gen'l Export Comm. Co. (Fine).....	30,000	
Gen'l Export Comm. Co. (Coarse).....	15,000	45,000
JUNE 3.—By the <i>Campana</i> =Liverpool:		
N. Y. Commercial Co. (Fine).....	360,000	
Henderson & Korn (Coarse).....	17,000	
Raw Products Co. (Coarse).....	11,000	388,000
JUNE 5.—By the <i>Florida</i> =Havre:		
De Lagotellerie & Co. (Coarse).....	4,500	
JUNE 9.—By the <i>Mauretania</i> =Liverpool:		
N. Y. Commercial Co. (Fine).....	115,000	
N. Y. Commercial Co. (Coarse).....	11,000	126,000
JUNE 12.—By the <i>Cincinnati</i> =Hamburg:		
Wallace L. Gough Co. (Fine).....	10,000	
JUNE 12.—By the <i>Arabic</i> =Liverpool:		
Henderson & Korn (Fine).....	4,500	
Rubber Trading Co. (Fine).....	9,000	
Henderson & Korn (Coarse).....	11,500	25,000
JUNE 13.—By the <i>Sarama</i> =Bolivar:		
General Export Com. Co. (Fine).....	6,000	
General Export Com. Co. (Coarse).....	5,000	
Iglesias Lobo & Co. (Fine).....	8,000	
Iglesias Lobo & Co. (Coarse).....	6,000	25,000
JUNE 14.—By the <i>Carmania</i> =Liverpool:		
Poel & Arnold (Fine).....	90,000	
Poel & Arnold (Coarse).....	11,000	101,000
JUNE 15.—By the <i>President Lincoln</i> =Hamburg:		
A. T. Morse & Co. (Cauchó).....	22,500	
JUNE 16.—By the <i>Lusitania</i> =Liverpool:		
N. Y. Commercial Co. (Fine).....	250,000	
Poel & Arnold (Fine).....	56,000	
Raw Products Co. (Coarse).....	34,000	340,000
JUNE 21.—By the <i>Olympic</i> =London:		
Poel & Arnold (Coarse).....	17,000	

OTHER NEW YORK ARRIVALS.

CENTRALS.

[*This sign, in connection with imports of Centrals, denotes Guayule rubber.]

Pounds.

May 23.—By the <i>African Prince</i> =Bahia:		
New York Commercial Co.	11,000	
May 3.—By the <i>Panama</i> =Colon:		
G. Amsinck & Co.	12,000	
J. Sambrada & Co.	6,000	
A. M. Capen's Sons.	5,000	
Pablo Calvert & Co.	3,500	
Mecke & Co.	2,000	
Lawrence & Kemp.	1,500	
American Trading Co.	1,500	
Jose Julia & Co.	1,500	
Wessels Kulenkampff & Co.	1,000	
Isaac Rubin & Co.	1,000	
Frederick & Hendon.	1,000	
George W. & Co.	1,000	
Isaac Brandon & Bros.	1,000	
Gillespie Bros. & Co.	1,000	
Dumarest Bros. & Co.	1,000	
Roldau & Van Sickle.	1,000	41,000
May 25.—By the <i>Momus</i> =New Orleans:		
A. T. Morse & Co.	1,500	
Geo. A. Alden & Co.	1,000	
Wessels Kulenkampff & Co.	1,000	3,700
May 27.—By the <i>El Rio</i> =Galveston:		
C. T. Wilson.	2,000	
May 29.—By the <i>Mexico</i> =Vera Cruz:		
H. Marquardt & Co.	2,500	
J. W. Wilson & Co.	2,000	
International Products Co.	1,500	
W. L. Wadsworth.	1,000	
Geoffrey, Huddell & Co.	1,000	
American Trading Co.	1,500	
Harburger & Stack.	1,000	13,000
May 29.—By the <i>Blanca</i> =Colon:		
G. Amsinck & Co.	8,500	
Mecke & Co.	7,000	
Harburger & Stack.	2,000	

May 1.—By the <i>Caronia</i> =Liverpool:		
N. Y. Commercial Co. (Fine).....	190,000	
JUNE 1.—By the <i>Coppename</i> =Bolivar:		
Gen'l Export Comm. Co. (Fine).....	30,000	
Gen'l Export Comm. Co. (Coarse).....	15,000	45,000
JUNE 3.—By the <i>Campana</i> =Liverpool:		
N. Y. Commercial Co. (Fine).....	360,000	
Henderson & Korn (Coarse).....	17,000	
Raw Products Co. (Coarse).....	11,000	388,000
JUNE 5.—By the <i>Florida</i> =Havre:		
De Lagotellerie & Co. (Coarse).....	4,500	
JUNE 9.—By the <i>Mauretania</i> =Liverpool:		
N. Y. Commercial Co. (Fine).....	115,000	
N. Y. Commercial Co. (Coarse).....	11,000	126,000
JUNE 12.—By the <i>Cincinnati</i> =Hamburg:		
Wallace L. Gough Co. (Fine).....	10,000	
JUNE 12.—By the <i>Arabic</i> =Liverpool:		
Henderson & Korn (Fine).....	4,500	
Rubber Trading Co. (Fine).....	9,000	
Henderson & Korn (Coarse).....	11,500	25,000
JUNE 13.—By the <i>Sarama</i> =Bolivar:		
General Export Com. Co. (Fine).....	6,000	
General Export Com. Co. (Coarse).....	5,000	
Iglesias Lobo & Co. (Fine).....	8,000	
Iglesias Lobo & Co. (Coarse).....	6,000	25,000
JUNE 14.—By the <i>Carmania</i> =Liverpool:		
Poel & Arnold (Fine).....	90,000	
Poel & Arnold (Coarse).....	11,000	101,000
JUNE 15.—By the <i>President Lincoln</i> =Hamburg:		
A. T. Morse & Co. (Cauchó).....	22,500	
JUNE 16.—By the <i>Lusitania</i> =Liverpool:		
N. Y. Commercial Co. (Fine).....	250,000	
Poel & Arnold (Fine).....	56,000	
Raw Products Co. (Coarse).....	34,000	340,000
JUNE 21.—By the <i>Olympic</i> =London:		
Poel & Arnold (Coarse).....	17,000	
May 1.—By the <i>Caronia</i> =Bahia:		
J. H. Rossbach & Bros.	20,000	
A. Hirsch & Co.	18,000	38,000
May 1.—By the <i>Magdalena</i> =Colon:		
Isaac Brandon & Bros.	3,500	
A. Jaramillo & Co.	3,000	
Mecke & Co.	2,000	
Caballero & Blanco.	2,000	
A. Rosenthal & Son.	1,500	
Kunhardt & Co.	1,500	
G. Amsinck & Co.	1,500	
J. Sambrada & Co.	1,000	
R. Del Gallego & Co.	1,000	17,000
May 31.—By the <i>Antilles</i> =New Orleans:		
A. T. Morse & Co.	5,000	
Robinson & Co.	3,000	
Manhattan Rubber Mfg. Co.	1,500	
G. Amsinck & Co.	1,000	10,500
May 31.—By the <i>Camaguey</i> =Tampico:		
Ed. Maurer.	*45,000	
For Antwerp.	*5,000	*50,000
May 31.—By the <i>Alfonso</i> =Colon:		
L. Johnson & Co.	11,500	
G. Amsinck & Co.	4,500	
Lawrence Import. Co.	1,000	
Isaac Brandon & Bros.	1,000	18,000
JUNE 1.—By the <i>Kentuckian</i> =Mexico:		
H. Marquardt & Co.	3,000	
Goodyear Tire & Rubber Co.	4,000	
J. A. Kendall Co.	2,000	9,000
JUNE 2.—By the <i>Matacanas</i> =Tampico:		
Ed. Maurer.	*45,000	
New York Commercial Co.	*34,000	
For Antwerp.	*9,000	*88,000
JUNE 3.—By the <i>Voltare</i> =Bahia:		
J. H. Rossbach & Bros.	36,000	
A. Hirsch & Co.	10,000	46,000
JUNE 3.—By the <i>President Grant</i> =Hamburg:		
A. T. Morse & Co.	*44,500	
JUNE 3.—By the <i>Morro Castle</i> =Frontera:		
E. N. Tibbals & Co.	7,000	
Harburger & Stack.	3,000	
Lawrence Import. Co.	2,500	
A. Klipstein & Co.	1,000	
H. Marquardt & Co.	1,000	
For London.	6,000	20,500
JUNE 6.—By the <i>Colon</i> =Colon:		
Mecke & Co.	3,000	
A. Jaramillo & Co.	2,000	
General Rubber Co.	2,500	
Dumarest Bros. & Co.	1,000	
L. Johnson & Co.	1,000	
Delima Cortisoz & Co.	1,000	10,500
JUNE 9.—By the <i>Proteus</i> =New Orleans:		
Robinson & Co.	3,500	
A. T. Morse & Co.	1,500	5,000
JUNE 9.—By the <i>El Occidente</i> =Galveston:		
Continental-Mexican Rubber Co.	*30,000	
C. T. Wilson.	*5,000	*35,000
JUNE 11.—By the <i>Manzanillo</i> =Tampico:		
New York Commercial Co.	*34,000	
Ed. Maurer.	*35,000	
For Antwerp.	*2,000	*71,000
JUNE 12.—By the <i>Segunda</i> =Vera Cruz:		
Lawrence Import Co.	2,500	
American Trading Co.	1,500	
E. N. Tibbals & Co.	1,000	
A. Klipstein & Co.	1,000	
Herman & Kluge.	1,000	
Harburger & Stack.	1,000	
For Havana.	3,000	11,000
JUNE 13.—By the <i>Alliance</i> =Colon:		
Piza, Nephews & Co.	3,500	
Pablo Calvert & Co.	1,000	
G. Amsinck & Co.	1,000	
Isaac Brandon & Bros.	1,000	
Cowdrey & Co.	3,000	9,500
JUNE 13.—By the <i>Manzanillo</i> =New Orleans:		
Manhattan Rubber Mfg. Co.	3,000	
G. Amsinck & Co.	2,000	
Lagers & Hendon.	1,000	6,000
JUNE 14.—By the <i>Pro</i> =Bahia, Colombia:		
G. Amsinck & Co.	11,500	
Caballero & Blanco.	4,000	
Schutte, Bunemann & Co.	3,000	
Kunhardt & Co.	2,500	
J. Sambrada & Co.	1,000	
Delima Cortisoz & Co.	1,000	23,000
JUNE 16.—By the <i>El Rio</i> =Galveston:		
Continental-Mexican Rubber Co.	*90,000	
C. T. Wilson.	*11,500	*101,500
JUNE 19.—By the <i>Monterey</i> =Frontera:		
Lawrence Import Co.	2,000	
Harburger & Stack.	1,500	
G. Amsinck & Co.	1,000	
A. Klipstein & Co.	1,000	5,500
JUNE 19.—By the <i>Bayamo</i> =Tampico:		
Continental-Mexican Rubber Co.	*45,000	
New York Commercial Co.	*34,000	
Ed. Maurer.	*9,000	*99,000

AFRICAN.

Pounds.

May 6.—By the <i>Cleveland</i> =Hamburg:		
Poel & Arnold.	13,500	
Wallace L. Gough Co.	10,000	
Rubber Trading Co.	5,000	
Raw Products Co.	3,500	
George A. Alden & Co.	4,500	
Robert Badenhop.	2,500	39,000
May 29.—By the <i>Baltic</i> =Liverpool:		
A. T. Morse & Co.	5,500	
May 29.—By the <i>Peruvian</i> =Lisbon:		
George A. Alden & Co.	11,500	
May 31.—By the <i>Finland</i> =Antwerp:		
A. T. Morse & Co.	34,000	
JUNE 1.—By the <i>Caronia</i> =Liverpool:		
William H. Stiles.	13,500	
JUNE 1.—By the <i>President Grant</i> =Hamburg:		
A. T. Morse & Co.	22,500	
Wallace L. Gough Co.	18,000	40,500
JUNE 3.—By the <i>Campana</i> =Liverpool:		
Henderson & Korn.	18,000	
Poel & Arnold.	5,000	23,000
JUNE 3.—By the <i>Amerika</i> =Hamburg:		
Poel & Arnold.	90,000	
George A. Alden & Co.	25,000	
Wallace L. Gough Co.	17,000	
A. T. Morse & Co.	5,500	
Robert Badenhop.	5,000	
Rubber Trading Co.	4,500	147,000
JUNE 5.—By the <i>Philadelphia</i> =London:		
George A. Alden & Co.	34,000	
JUNE 5.—By the <i>Celtic</i> =Liverpool:		
George A. Alden & Co.	17,000	
Henry A. Gould Co.	22,000	
James T. Johnstone.	4,500	43,500
JUNE 7.—By the <i>La Bretagne</i> =Havre:		
A. T. Morse & Co.	11,500	
Muller, Schall & Co.	11,000	
George A. Alden & Co.	9,000	31,500
JUNE 8.—By the <i>Georgian</i> =Antwerp:		
Muller, Schall & Co.	22,500	
Poel & Arnold.	16,500	
William H. Stiles.	15,000	53,500
JUNE 11.—By the <i>Lafayette</i> =Antwerp:		
A. T. Morse & Co.	30,000	
Rubber Trading Co.	15,000	
Wallace L. Gough Co.	11,500	
Muller, Schall & Co.	9,000	65,500
JUNE 12.—By the <i>Arabic</i> =Liverpool:		
Poel & Arnold.	34,000	
Henderson & Korn.	11,000	
Henry A. Gould Co.	11,500	
George A. Alden & Co.	11,500	
James T. Johnstone.	2,000	70,000
JUNE 12.—By the <i>Cincinnati</i> =Hamburg:		
General Rubber Co.	9,000	
George A. Alden & Co.	4,500	
Wallace L. Gough Co.	8,000	21,500
JUNE 14.—By the <i>Carmania</i> =Liverpool:		
General Rubber Co.	30,000	
Robert Badenhop.	20,000	
A. W. Brunn.	5,000	55,000
JUNE 15.—By the <i>Carolina</i> =Havre:		
A. T. Morse & Co.	68,000	
JUNE 15.—By the <i>President Lincoln</i> =Hamburg:		
A. T. Morse & Co.	11,000	
JUNE 16.—By the <i>Lusitania</i> =Liverpool:		
Robinson & Co.	7,000	
James T. Johnstone.	3,500	10,500
JUNE 20.—By the <i>Federland</i> =Antwerp:		
A. T. Morse & Co.	34,000	
JUNE 20.—By the <i>Blanca</i> =Hamburg:		
Poel & Arnold.	30,000	
Robert Badenhop.	19,000	
Wallace L. Gough Co.	18,000	

F. Rosenstern & Co.....	13,500	
A. T. Morse & Co.....	11,000	
Rubber Trading Co.....	11,500	
General Rubber Co.....	3,000	
Raw Products Co.....	2,000	108,000

EAST INDIAN.

[*Denotes plantation rubber.]

MAY 25.—By the <i>St. Paul</i> =London:		POUNDS.
New York Commercial Co.....	*77,000	
William H. Stiles	*5,000	*82,000

MAY 25.—By the <i>Kalame</i> =Colombo:		
New York Commercial Co.....	*20,000	

MAY 26.—By the <i>Cleveland</i>	4,800	
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MAY 29.—By the <i>New York</i> =London:		
Poel & Arnold	*45,000	
New York Commercial Co.....	*22,500	*67,500

MAY 29.—By the <i>Adamstrum</i> =Colombo:		
New York Commercial Co.....	*13,500	
A. T. Morse & Co.....	*13,500	
Poel & Arnold	*3,500	*30,500

MAY 31.—By the <i>Minnewaska</i> =London:		
A. T. Morse & Co.....	*40,000	
General Rubber Co.....	*11,500	
Robinson & Co.....	*10,000	
James T. Johnstone	*5,500	
Ed. Maurer	*3,500	*70,500

JUNE 1.—By the <i>Majestic</i> =London:		
Poel & Arnold	*39,000	
A. T. Morse & Co.....	*13,500	*52,500

JUNE 5.—By the <i>Philadelphia</i> =London:		
New York Commercial Co.....	*37,000	
Poel & Arnold	*15,500	
William H. Stiles	*6,500	*59,000

JUNE 5.—By the <i>Lowther Castle</i> =Singapore:		
Ed. Maurer	*4,500	
A. W. Brunn	*2,500	
Wallace L. Gough Co.....	11,500	
Poel & Arnold	11,000	
A. W. Brunn	5,000	
Manhattan Rubber Mfg. Co....	2,500	37,000

JUNE 6.—By the <i>Minneapolis</i> =London:		
A. T. Morse & Co.....	*45,000	
James T. Johnstone	*22,500	
General Rubber Co.....	*13,500	
Wallace L. Gough Co.....	*6,000	
Ed. Maurer	*2,500	*89,500

JUNE 7.—By the <i>Ghazee</i> =Singapore:		
Haebler & Co.....	20,000	

JUNE 8.—By the <i>Karema</i> =Colombo:		
New York Commercial Co.....	*23,000	
Thomsen & Co.....	*13,000	*36,000

JUNE 8.—By the <i>Adriatic</i> =London:		
Poel & Arnold	*40,000	
New York Commercial Co....	*15,000	*55,000

JUNE 8.—By the <i>Georgian</i> =Antwerp:		
A. T. Morse & Co.....	*60,000	

JUNE 10.—By the <i>St. Louis</i> =London:		
New York Commercial Co.....	*10,000	

JUNE 12.—By the <i>Lapland</i> =Antwerp:		
A. T. Morse & Co.....	*50,000	
Poel & Arnold	*6,500	
Rubber Trading Co.....	*3,500	*60,000

JUNE 12.—By the <i>Arabic</i> =Liverpool:		
William H. Stiles	*27,000	

JUNE 12.—By the <i>Minnetonka</i> =London:		
A. T. Morse & Co.....	*45,000	
James T. Johnstone	*22,500	
Ed. Maurer	*7,000	
In transit	*22,500	*97,000

JUNE 14.—By the <i>Oceanic</i> =London:		
New York Commercial Co.....	*23,500	
Earle Brothers	*3,500	*27,000

JUNE 15.—By the <i>Seneca</i> =Singapore:		
Ed. Maurer	*18,000	
Manhattan Rubber Mfg. Co....	*11,500	
Ed. Maurer	25,000	54,500

JUNE 16.—By the <i>Neidenfels</i> =Colombo:		
A. T. Morse & Co.....	*50,000	
New York Commercial Co....	*34,000	*84,000

JUNE 17.—By the <i>St. Patrick</i> =Singapore:		
Ed. Maurer	*15,000	
A. W. Brunn	*3,000	
Otto Isenstein & Co.....	*2,500	
Poel & Arnold	5,500	
A. W. Brunn	11,500	
Haebler & Co.....	11,000	48,500

JUNE 19.—By the <i>Minnehaha</i> =London:		
General Rubber Co.....	*25,000	
A. T. Morse & Co.....	*17,000	
Poel & Arnold	*7,000	
Ed. Maurer	*3,500	
Raw Products Co.....	*2,000	*54,500

JUNE 21.—By the <i>Olympic</i> =London:		
New York Commercial Co....	*35,000	
Poel & Arnold	*5,500	
Robinson & Co.....	*3,500	*44,000

JUNE 23.—By the <i>Wartum</i> =Colombo:		
New York Commercial Co....	*15,000	
Thomsen & Co.....	*3,500	*18,500

GUTTA-JELUTONG. POUNDS.

JUNE 5.—By the <i>Lowther Castle</i> =Singapore:		
L. Littlejohn & Co.....	1,320,000	
Haebler & Co.....	300,000	
Wallace L. Gough Co.....	275,000	
A. W. Brunn	235,000	
Robinson & Co.....	150,000	
Otto Isenstein & Co.....	22,000	2,302,000

JUNE 7.—By the <i>Ghazee</i> =Singapore:		
Haebler & Co.....	150,000	
L. Littlejohn & Co.....	490,000	
Wallace L. Gough Co.....	150,000	
A. W. Brunn	150,000	
George A. Alden & Co.....	55,000	995,000

JUNE 16.—By the <i>St. Patrick</i> =Singapore:		
L. Littlejohn & Co.....	1,000,000	
Haebler & Co.....	600,000	
Wallace L. Gough Co.....	300,000	
A. W. Brunn	135,000	
George A. Alden & Co.....	125,000	
Poel & Arnold	150,000	2,310,000

GUTTA-PERCHA. POUNDS.

MAY 26.—By the <i>Cleveland</i> =Hamburg:		
Robert Soltau & Co.....	8,000	

JUNE 5.—By the <i>Lowther Castle</i> =Singapore:		
L. Littlejohn & Co.....	60,000	
Haebler & Co.....	45,000	105,000

JUNE 7.—By the <i>Ghazee</i> =Singapore:		
Haebler & Co.....	30,000	
L. Littlejohn & Co.....	22,500	
Otto Isenstein & Co.....	15,000	67,500

JUNE 12.—By the <i>Cincinnati</i> =Hamburg:		
Robert Soltau & Co.....	6,000	

JUNE 16.—By the <i>St. Patrick</i> =Singapore:		
Haebler & Co.....	67,000	
L. Littlejohn & Co.....	45,000	
Ed. Maurer	22,500	134,500

JUNE 20.—By the <i>Bluecher</i> =Hamburg:		
Robert Soltau & Co.....	7,000	

BALATA. POUNDS.

MAY 31.—By the <i>Maracas</i> =Trinidad:		
Middleton & Co.....	5,000	
Ed. Maurer	2,500	7,500

JUNE 13.—By the <i>Saramaca</i> =Demerara:		
Middleton & Co.....	25,000	
Ed. Maurer	8,000	33,000

JUNE 13.—By the <i>Noordam</i> =Rotterdam:		
R. J. Dick & Co.....	15,000	

JUNE 20.—By the <i>Marowijne</i> =Trinidad:		
Ed. Maurer	3,500	
Suzarte & Whitney	2,500	
Middleton & Co.....	4,000	10,000

CUSTOM HOUSE STATISTICS.

PORT OF NEW YORK.—MAY.

Imports:	Pounds.	Value.
India-rubber	6,271,304	\$7,258,200
Balata	40,282	25,641
Gutta-percha	177,507	43,763
Gutta-jelutong (Pontianak)...	1,457,046	81,789
Guayule	472,980	240,239
Total	8,419,119	\$7,649,632

Exports:	Pounds.	Value.
India-rubber	174,795	\$150,964
Balata	1,059	694
Gutta-percha	43,638	4,678
Guayule	21,947	11,917
Reclaimed rubber	152,752	17,729
Rubber scrap, imported	1,438,432	\$126,007
Rubber scrap, exported	528,875	66,897

BOSTON ARRIVALS.

MAY 6.—By the <i>Iberian</i> =Liverpool:		
George A. Alden & Co. (Africans)...	11,500	

MAY 10.—By the <i>Sagamore</i> =Liverpool:		
George A. Alden & Co. (Africans)...	9,000	

MAY 15.—By the <i>Devonian</i> =Liverpool:		
George A. Alden & Co. (Africans)...	33,500	

MAY 27.—By the <i>Lowther Castle</i> =Singapore:		
State Rubber Co. (Jelutong)...	567,000	
L. Littlejohn & Co. (Jelutong)...	325,000	
G. A. Alden & Co. (Jelutong)...	34,000	926,000

MAY 30.—By the <i>Winifredan</i> =Liverpool:		
G. A. Alden & Co. (Africans)...	15,700	
Wallace L. Gough Co. (Fine)...	10,000	25,700

PARA EXPORTS OF INDIA-RUBBER, APRIL, 1911 (IN KILOGRAMS).

EXPORTERS.	NEW YORK.					EUROPE.					TOTAL.
	Fine.	Medium.	Coarse.	Caucho.	TOTAL.	Fine.	Medium.	Coarse.	Caucho.	TOTAL.	
Gruner & Co.....	2,720	340	72,514	26,349	101,923	62,915	16,941	22,278	87,484	189,618	291,541
Gordon & Co.....						68,358	6,989	8,616	12,519	96,482	96,482
Suarez Hermanos & Co., Ltd....						56,911		4,208	30,253	91,372	91,372
Adelbert H. Alden, Ltd.....	6,156	474	23,760	42,540	72,930				10,890	10,890	83,820
E. Pinto Alves & Co.....	2,210	1,360	29,040	12,330	44,940	18,700		9,086	4,447	32,233	77,173
Alves Braga Rubber Estates & Trading Co., Ltd.....	48,976	7,781	11,873	673	69,303						69,303
R. O. Ahlers & Co.....	15,142		953	33,312	49,407	12,889		1,812	2,836	17,537	66,944
De Lagotellerie & Co.....	5,950	850	28,380		35,180	10,880		5,280		16,160	51,340
Pires Teixeira & Co.....			10,560		10,560	16,151	315	6,155	154	22,775	33,335
Guilherme Aug. de Miranda Filho	14,430	1,588	624		16,642	690		1,430	129	4,275	20,917
Scholz, Hartje & Co.....			2,310		2,310	14,960	1,360	660	330	17,310	19,620
A. de la Riviere & Co.....						4,533	647	2,878		8,058	8,058
I. Marques						3,410	1,429	620		5,459	5,459
Braga Sobrinho & Co.....						446	40	23		509	509
Sundries			3,960		3,960	7,650	340	1,320		9,310	13,270
Itacoatiara, direct						4,960	320	7,267	308	12,855	12,855
Manaos, direct	293,833	87,235	168,180	172,028	721,276	475,710	79,104	91,116	308,338	954,268	1,675,544
Iquitos, direct						63,461	6,125	23,036	131,536	224,158	224,158
Total, April, 1911.....	389,417	99,628	352,154	287,232	1,128,431	823,960	114,300	185,785	589,224	1,713,269	2,841,700
Total, March, 1911.....	268,926	71,692	283,502	76,499	700,619	1,349,885	176,348	399,138	551,188	2,476,559	3,177,178
Total, February, 1911.....	462,123	111,594	454,235	113,921	1,141,873	1,477,804	201,533	330,181	608,595	2,618,113	3,759,986
Total, January, 1911.....	728,494	157,522	563,542	245,226	1,694,784	884,484	117,265	123,838	287,438	1,413,025	3,107,809



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Liverpool.

WILLIAM WRIGHT & Co. report [June 1]:

Fine Pará.—Owing to reported discussions in the syndicate, apparently justified by an absence of initiative on their part, a further serious decline in values has taken place, several large holdings both of importers and speculators have been forced on the market, with the result that prices have declined from 5s. 4d. [= \$1.30] to 3s. 10½d. [= \$.94]. This decline has had the effect of bringing in large trade orders, especially from American manufacturers, which is a healthy sign. A large quantity of Pará is in course of shipment to New York, which will not appear in this month's shipments, but will be shown later on. Granted that there was no justification for 12s. 6d. [= \$3.04] last year, equally we think present conditions of trade do not justify 3s. 10½d. [= \$.94]. All the

talk and new-paper gossip is done for the purpose of the interested few, who are anxious to manipulate the market for their own ends, and not in the interests of the manufacturers; and we honestly believe that any manufacturer who covers himself, at least to some extent, at today's prices will be acting wisely, despite the talk of the increase of plantation rubber. A continuance of present rates means undoubtedly a smaller production next year, both of Pará and other medium grades. There is no doubt America is short of rubber, and America has more than once "fooled" Europe. They will in our opinion do so on this occasion, unless European manufacturers are very careful. It is currently reported, and we believe there is truth in the report, that America is willing to take the whole of the accumulated stocks of Pará at a price, and the present market manipulation has probably that end in view. Whether this view of the situation is or is not correct, we do believe that by taking advantage of present prices, manufacturers will realize a handsome profit on their sales of the manufactured product. Closing values: Upriver 3s. 10½d. [= \$.94]; Island, 3s. 11d. [= \$.95].

Plantation Rubber from the Far East.

EXPORTS OF CEYLON GROWN RUBBER.

[From January 1 to May 22, 1910 and 1911. Compiled by the Ceylon Chamber of Commerce.]

	1910.	1911.
To Great Britain.....pounds	424,240	947,187
To United States.....	387,733	669,141
To Belgium.....	16,496	127,606
To Australia.....		16,013
To Japan.....		15,165
To Canada.....	1,911	9,971
To Germany.....	7,059	7,585
To Italy.....	841	3,597
To France.....		117
To Holland.....		100
To India.....		40

Total..... 838,280 1,796,522
[Same period 1909—359,661 pounds; same 1908—241,485.]

TOTAL EXPORTS FROM MALAYA.

[From January 1 to dates named. Reported by Barlow & Co., Singapore. These figures include the production of the Federated Malay States, but not of Ceylon.]

FROM—	1909.	1910.	1911.
Singapore (to April 29).....pounds	832,793	1,012,863	1,903,169
Penang (April 16).....	786,903	494,122	1,315,771
Port Swettenham (April 13).....		2,215,583	3,765,400
Total.....	1,619,696	3,722,568	6,984,340

Antwerp.

RUBBER STATISTICS FOR MAY.

DETAILS.	1911.	1910.	1909.	1908.	1907.
Stocks, April 30.....kilos	599,114	470,468	607,787	717,913	461,573
Arrivals in May.....	257,985	190,058	515,061	415,404	644,324
Congo sorts.....	187,106	128,052	442,098	337,368	557,136
Other sorts.....	70,879	62,006	72,963	78,036	87,188
Aggregating.....	857,099	660,526	1,122,848	1,133,317	1,105,897
Sales in May.....	243,089	116,663	433,610	361,740	352,983
Stocks, May 31.....	614,016	543,863	689,238	771,577	752,914
Arrivals since January 1.....	1,794,030	1,659,607	1,973,430	2,144,762	2,281,955
Congo sorts.....	1,259,621	1,299,338	1,443,130	1,859,791	1,938,228
Other sorts.....	534,409	360,269	530,300	284,971	343,727
Sales since January 1.....	1,768,232	1,657,256	1,879,927	2,380,079	2,187,225

Rubber Receipts at Manaos.

DURING April and ten months of the crop season, for three years (courtesy of Messrs. Scholz & Co.):

	APRIL.			JULY-APRIL.		
FROM—	1911.	1910.	1909.	1910-11.	1909-10.	1908-09.
Rio Purús-Acre.....tons	457	376	545	9,518	9,481	8,411
Rio Madeira.....	288	269	141	2,984	3,225	2,935
Rio Juruá.....	400	463	280	3,798	4,085	3,966
Rio Javary-Iquitos.....	186	38	96	2,233	2,571	2,414
Rio Solimoes.....	57	70	35	1,192	1,167	980
Rio Negro.....	123	40	72	491	684	555
Total.....	1,511	1,256	1,169	20,216	21,213	19,261
Caucho.....	889	1,022	781	4,531	6,209	5,820
Total.....	2,400	2,278	1,950	24,747	27,422	25,081
For Shipment From						
Manaos.....	1,587	1,555	1,266	17,093	19,839	18,308
Pará.....	813	723	684	7,654	7,583	6,773
Total.....	2,400	2,278	1,950	24,747	27,422	25,081

Para.

R. O. AHLERS & Co. report [June 10]:

The market has been entirely subject to the fluctuations of the Liverpool market without showing any feature of own individuality. The failure of one of the larger receivers of rubber from upriver is only an expression of the general financial weakness of the first-hand holders and it is believed that others will follow.

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INDIA RUBBER WORLD

CAOUTCHOUC

HEVEA BRASILIENSIS

ANCHORIS GUTTA

GUTTA-PERCHA

Edited by HENRY C. PEARSON—Offices, No. 15 West 38th Street, NEW YORK.

Vol. XLIV. No. 5.

AUGUST 1, 1911.

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Published on the 1st of each Month by

THE INDIA RUBBER PUBLISHING CO.

No. 15 West 38th Street, New York.

CABLE ADDRESS: IRWORLD, NEW YORK.

HENRY C. PEARSON, Editor

Vol. 44.

AUGUST 1, 1911.

No. 5

SUBSCRIPTIONS: \$3.00 per year, \$1.75 for six months, postpaid, for the United States and dependencies and Mexico. To the Dominion of Canada and all other countries, \$3.50 (or equivalent funds) per year, postpaid.

ADVERTISING: Rates will be made known on application.

REMITTANCES: Should always be made by bank or draft, Postoffice or Express money orders on New York, payable to THE INDIA RUBBER PUBLISHING COMPANY. Remittances for foreign subscriptions should be sent by International Postal Order, payable as above.

DISCONTINUANCES: Yearly orders for subscriptions and advertising are regarded as permanent, and after the first twelve months they will be discontinued only at the request of the subscriber or advertiser. Bills are rendered promptly at the beginning of each period, and thereby our patrons have due notice of continuance.

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Entered at New York postoffice as mail matter of the second class.

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LESSONS OF THE EXHIBITION.

THE International Rubber Exhibition, as in a mirror, reflected the crude rubber situation of the world. Some of the lesser producing countries, the Central American, for example, were not in evidence. Nor did Bolivia and Peru embrace the opportunity to impress upon the world their position as producers. But the rest of tropical America, Africa, Asia and Oceanica was abundantly in evidence.

Clean rubber from the great *Hevea* plantations in the middle East is the leaven that is working to produce an equally clean product from the Amazon, from the British, German, Dutch, Belgian, and French rubber producing countries. The success in planting *Hevea* is stimulating a practical exploitation of *Castilloa*, *Manihot*, *Landolphia*, *Funtumia*, *Sapium* and *Ficus*. The triumph of guayule is leading to experiments with "grass rubbers" and their like. Pontianak extraction has stimulated a general investigation of scores of pseudo gums. All of these and many more are indi-

cated in the thousands of samples of rubber prepared by hundreds of methods unknown a few years ago.

In the many instruments and machines, particularly German, for testing accurately all of the varying qualities of rubber, one notes a distinct industrial advance.

The remarkable progress in the production of crude rubber, and in the ability to classify it with exactness, points not only to a great extension of the business as a whole, but to an early and thorough standardization of the crude material.

A RUBBER EXHIBITION FOR AMERICA.

AGAIN the plan for a rubber exhibition in New York has come to the front. One enthusiastic boomer has already set the time—June, 1912—and the place, the magnificent new Grand Central Palace. Cables have been sent to Europe, but so far there has not been an enthusiastic response.

Another set of hustlers are planning one for 1913—place not yet decided upon.

It goes without saying that sometime, somewhere, New York will one day have a rubber exhibition.

If the right preparations are made, if the Middle East, African and all of tropical America send their best exhibits, if all of the new testing machines and instruments of precision applicable to rubber that Germany, England, France, Belgium and Holland have produced are exhibited, it will be well worth the trouble and expense.

More than this, it would bring to our shores a notable gathering of scientific men, botanists, chemists, physicists, planters and manufacturers, and the educational result could not fail to be very great.

THE AWAKENING IN PARA.

THE great natural riches of the state of Pará have in the past been practically untouched by the Brazilians. It is therefore most gratifying to see indications of a decided change on the part of the state government. One is the visit of Dr. Jacques Huber, of the Musee Goeldii, to London, as delegate to the International Rubber Exposition. His paper, read at one of the conferences, will draw fresh attention to the Amazon countries; while his examination of the products of planted *Hevea*, of rubber planting machinery and methods, will be of great value to the rubber producers of the lower Amazon.

AUG 4 - 1911

Of greater significance, however, is the presence in the Brazilian exhibits of rubbers other than fine and coarse Pará. There is no reason why certain of the *Sapiums*, of the *minusops* and of other gum producers which are abundant all through the Amazon country should not be producers for the market.

That the official plans contemplate extensive colonization, means not only the planting of rubber but utilization of any kind that it is profitable to tap. With the assurance of a fair export duty on balata, for example, there is little doubt but "cruisers" from the Guianas and Venezuela would soon locate rich "reefs" and add much to the world's supply of this valuable gum.

FURTHER BRAZILIAN PLANS.

RECOGNIZING the fact that the exceptional conditions now prevailing in the rubber industry of Brazil call for special action, the State of Pará is reported to have lately enacted various laws of a remedial character. The danger to which South American rubber is exposed, from the advent of plantation rubber from the Far East upon the markets of the world, is not a problematical one. Its reality is proved by the stock on hand in Pará, estimated on May 31 at 5,350 tons. The introduction of the Eastern rubber replacing the South American product, is a constantly growing menace to the latter, and has doubtless influenced the decision of the Pará legislature.

The measures passed provide for the issue of a foreign loan upon joint State and Federal responsibility to the amount of \$30,000,000 for a period of ten years at not more than 5 per cent. interest. The interest on the loan will be covered by a tax equalling about six cents per pound.

It is contemplated to use the proceeds of the loan for the protection of the rubber industry. The steps contemplated include as a prominent feature the establishment of a bank at Pará, through which advances will be made on land and produce. In the former case the limit is to be 40 per cent. of the value, while loans for the working of plantations are not to exceed one-half of the average annual profit during the preceding four years, and are repayable within eighteen months. The maximum rates to be charged by the bank are to be 10 per cent. on mortgages and 9 per cent. on other business.

Special importance is attached to the starting of establishments for the refining (washing) of crude rubber by the best method to be selected for the pur-

pose. In this way it is contemplated to export only one quality, to be of the best grade possible.

With the view of affording improved facilities of transportation it is announced by the Port of Pará Company that it has decided upon the construction of a fleet of vessels for the Amazon trade. This step, even apart from the others projected, would considerably help to meet the present competition of plantation rubber. This company is American, having been incorporated in 1906 under the laws of Maine. Its head office is at Portland, Maine, and it also has offices in London, Paris and Rio de Janeiro, likewise having Brazilian charters. Its capital is \$17,500,000, fully paid up, in addition to bonds equalling \$43,000,000. The company obtained a concession for the construction and operation of harbor works at the Port of Pará.

This new legislation, it will be noticed, more or less corresponds with the suggestion of Senhor Passos Miranda, to which the July issue of THE INDIA RUBBER WORLD called attention.

THE MOTOR TRUCK WINS.

THE recent excessively hot weather furnished argument of an irrefutable character in favor of the motor truck, as against the horse-drawn vehicle, for the transportation of freight. Truckmen engaged in business on a large scale, admitted that the substitution of commercial motors for horse trucks, would not only have saved them heavy loss in dead and disabled animals, but the power to move loads of normal magnitude at the ordinary or greater speed, without cruelly overtaxing their patient animal aids, would have immeasurably increased the efficiency of their service and contributed materially to public convenience. Confronted with a death list of about 10,000 horses—2,000 in New York alone—due to heat, besides innumerable prostrations, to say nothing of the reduced efficiency of the commercial transportation service and the suffering caused to draught animals, whereas not a single motor truck was reported as even "affected by the heat," the advisability of replacing the horse by the motor becomes forcibly apparent.

Nor is it only in the summer season that the advantages of the commercial automobile impress themselves on the community. In winter, after a snow-fall, with the horse truck hopelessly "stalled" in spite of the efforts of overstrained teams, or when streets coated with ice, are dangerous or impassable to horses, there is little or no interruption to automobile service.

Other and equally urgent arguments may be advanced in favor of the substitution of motor propelled for horse-drawn vehicles in city streets. Sanitary reasons alone should dictate their preference, especially during the warm months, and a reduction in the equine population of the frequently overcrowded, poorly located and not always sanitary city stables, is equally desirable. Then, again, there is the question of space; approximately three automobile trucks would occupy no more room in the streets, on docks, ferries, etc., than two horse trucks, with much greater carrying capacity; this would mean an increase of about fifty per cent. in the space available for trucks, etc., in the streets, and, according to competent authorities, would materially relieve the existing traffic congestion. The recently expressed determination of several of the steamship companies, to admit automobile trucks to their piers—following the action of the insurance companies in waiving their objection to the presence of gasoline autos on these structures—will in like manner facilitate the handling of freight and relieve the crowded condition of the water-front.

Careful calculations have shown an unquestionable saving in maintenance and operating expense in favor of the motor truck, as compared with one drawn by horses, while with modern improvements in mechanism and construction, the chances of delay or interruption to service has been reduced to a minimum. The latter is, moreover, a most important factor where long hauls are undertaken. Transcontinental trips by motor trucks carrying considerable loads, have been by no means uncommon, and the obstacles the sturdy vehicles have successfully surmounted on these long journeys have fully demonstrated their serviceability.

Another and a very important feature in the advancement of the motor-truck to its present prominent position has been the tire equipment. It has been decided, after careful observation and exhaustive tests, that for vehicles of light or medium weight, the pneumatic tire gives best results, especially following the plan adopted by some of the most successful truck builders in mounting two tires on one wheel, so that in the event of an accident to one tire, the other is there to take up the work. Here again a source of objection to the motor vehicle has been successfully eliminated, and it has been demonstrated that quite large loads can be successfully and cheaply transported on air-filled tires, the speed and efficiency of the vehicle being at the same time materially increased.

The replacement of the horse-drawn by the motor-propelled vehicle, even if gradual, will seriously affect a number of important industries. It is said, also, that the change is not likely to be effected gradually, but that a realization of the advantages with which it is certain to be attended, will result in a general movement in favor of the commercial automobile, and that the transformation will be effected more quickly than is anticipated. It is certain that in some circles—notably among express companies, manufacturers doing their own trucking, farmers, etc.—conditions are ripe for the change, and the movement once fairly inaugurated, is likely to progress with surprising rapidity.

Of special interest in this connection are the reports on horse-drawn vehicles in the United States. According to figures taken partly from statistics and partly from those who are in touch with that trade, there were manufactured in 1910, 1,700,000 horse-drawn vehicles. Of these, were pleasure vehicles, such as runabouts, buggies, and light carriages, 925,000; heavy pleasure vehicles, broughams and coaches, 150,000; business vehicles, such as light express wagons, 125,000; heavy business wagons and farm wagons, 500,000. The proportion of vehicles having solid tires figures out about as follows: Light pleasure vehicles, 60 per cent.; heavy pleasure vehicles, 85 per cent.; business vehicles, 15 per cent.; wagons, practically none. It is well to remember of business vehicles that those equipped with rubber tires are mostly used in cities. There are also very few light pleasure vehicles west of the Mississippi equipped with rubber tires—that is, until one reaches the Pacific coast.

A TIRE MAN GETS THE MILLIONTH PATENT.

AS THE numbers issued by the United States Patent Office have been climbing up the late 900,000's inventors with patents pending and patent lawyers have been anxiously craning their necks to see who would get patent No. 1,000,000. It is a round, full number, pleasant to contemplate and bound to bring the fortunate patentee good luck in the way of abundant free advertising, if in no other way. So, as the number of patents issued approached the magical million mark, everybody has been peering ahead to discover the winner. The Patent Office is not noted for bubbling garrulity, but the fact has been divulged that patent No. 1,000,000, which will be issued about the 10th of August, will go to Mr. Hilton (presumably of

Cleveland, as his lawyers hail from there) for a rubber tire with special features adapting it particularly for motor-car use. Happy Hilton, there's a million in it for him at the very start.

"THE RUBBER BUSINESS AND EXPECTATION OF LIFE."

It has often been remarked that rubber manufacture must be a fairly healthful occupation because there were so many men well along in years that were still actively employed. So far as we know the life insurance companies have never taken the trade as a whole upon which to base any of their figures. It therefore remains for us to present a table of vital statistics which will be of interest at least to those who have passed the fifty mark.

Taking one hundred officials in rubber concerns in the United States and Canada, who during the past ten years have passed away, the following is found:

Deaths between 20 and 30.....	1
" " 30 " 40	2
" " 40 " 50	10
" " 50 " 60	25
" " 60 " 70	34
" " 70 " 80	21
" " 80 " 90	6
" " 90 " 100	1

100

A surprisingly high average of life is found, the figures being 65.76.

Pneumonia and heart failure seem to be the diseases that are most common. The months of June and March are the fatal months, while September has the fewest records of death.

The common belief that the period of a man's life that comes between 50 and 57 is most critical would seem not to apply to rubber men, according to these figures, although dangerous periods occur from 53 to 56 and from 63 to 65.

TRADE RELATIONS WITH VENEZUELA.

SO long as this country is importing to the extent of about 200 millions of dollars from South American countries, and is exporting in that direction only about one-half of that amount, there will remain an unfavorable balance of trade, which our manufacturers and exporters are constantly trying to equalize. These general conditions apply even in a higher degree to the case of Venezuela, from which country we imported in 1910 to the extent of \$6,701,352, while

our exports to that market only represented \$2,797,210.

Venezuela returns show total exports from that country for 1910 of about 18 millions of dollars, of which about 6 million dollars' worth came to the country. During the same period the imports of Venezuela represented about 8½ millions of dollars, of which the American share was (as already shown) about 2¾ millions.

Venezuelan exports include:

	To all countries.
Coffee	\$8,050,070
Cocoa	3,381,733
Hides	752,745
Balata	2,193,901
Rubber	851,939
Other articles	2,538,529

\$17,948,917

Comparing the figures for total Venezuelan exports of rubber and balata, with the United States returns for the imports of those articles from Venezuela, the following result is shown:

1910.	Balata.	Rubber.
Venezuelan exports	\$2,193,901	\$851,939
U. S. imports from Venezuela..	35,261	511,057

Thus, while apparently 60 per cent. of Venezuelan rubber comes to this country, only a small quantity of balata from that source finds its way here.

As to cotton goods, the preponderance of England in Venezuelan imports is notable. Out of a total import of \$3,756,750 this country only supplied goods to the extent of \$289,070, while England secured trade representing \$2,367,370.

Perhaps a little encouragement by United States purchasers of Venezuelan balata might through mutual influence reciprocally affect the favor of American cottons in that country. Anyway, the interests of American exporters and importers are more or less in harmony as to trade relations with our nearest South American neighbor.

WITH A BORDER OF TAPPING TOOLS.

A RUBBER planting company asks us to suggest a catch phrase for their letter head that will be appropriate, chaste and to the point. We are of the opinion that catch phrases are overdone and not as effective as they once were. Some new method of attracting attention is required, as, for example, a bit of verse, such as

Little drops of Latex
Gathered in the hand
Make the mighty motor tire
And the rubber band.

British Guiana and India-Rubber

By the Editor of THE INDIA RUBBER WORLD

THIRD LETTER.

Population of British Guiana. Coolies.—The "Sea Devil" and the Hoatzin.—Gold and Diamonds.—The "Deadly Climate."—Snake Stories.—Early Plantings of *Hevea*.—Experimental Plantings by the Agricultural Department.—Rain-fall.—Shipping Rubber.—Packing Seeds.—The Balata Syndicate.

CONSIDERING its area British Guiana is very sparsely populated. The latest census record is about 300,000 souls, one-third of them East Indian Coolies. There are but two cities of note, Georgetown and New Amsterdam. The country is really new and so full of opportunities that one wonders at the way the world has passed it by. The coolies, who are brought in as laborers on the large estates, are good workers and very tractable and polite. The stranger passing through the coolie quarters of Georgetown is quite likely to be greeted with: "Salaam Papa"—not a claim of blood relationship, but just their deferential way of saying "good day."

Like Northern Brazil, British Guiana, has the jaguar, the tapir and the manatee, it has the great bird eating spiders, its big rivers swarm with fish, its forests with game, its jungles with snakes, great and small. It also has strange creatures of its own. It was on a Guianan river that one night I heard a "sea devil" crash down on the surface of the water, and thereafter listened to tales of its enormous size, of its habit of enwrapping divers in its great side fins and feeding on them as they drowned. Then there is the Hoatzin, earth's only known link between bird and reptile—a bird whose young are hatched out four footed, but who turn into bipeds, their forelegs shedding claws and sprouting feathers as they mature. There are the gold fields, the diamond fields, and the great unexplored reaches of forest and savannah that are full of fascination—a paradise for hunter, botanist, naturalist and yes health seeker. There has been no



"SAPIUM JENMANI" at RUBBERTON, LOWER BARIMA RIVER.

Their women are slender, black eyed, well mannered and gorgeously dressed. For example, one wore a scarlet hat, pale pink waist, deep pink belt, white skirt, green scarf, brown stockings, black shoes. A "real lady," dressed just like the European as she firmly believed. The other laborers are native and West Indian negroes, and they are a uniformly capable, willing lot of men.

yellow fever since '81 and then it was brought in from another country. There is malaria, but one need not acquire it, if careful, and this I would affirm even to the distinguished lecturer, who addressing a New York audience on Brazil and the Guianas, summarized the latter country thus: "Along here we pass the country known as British Guiana, which has a climate so hot and deadly that no white man can live there." As I pen these lines

in New York the thermometer stands at 104 degs. Fahr., with hundreds of deaths and prostrations. Personally I yearn for the safe warmth, the cool nights and the gentle healthful climate of Guiana.

"Yo know Massa Johnson, we a go ride one marnin top he horse en he tenk he go Berbice, but he see one big ting across he path dat he no ken go. He look en he look and he see a one big snake! A true, a snake belly a so big a horse no can leap em,



TAKUTU CREEK.



CLEARING FOR RUBBER PLANTING.

Speaking of snakes there are many in the Guianas and most of the planters can show the visitor some very sizable skins. I could not, however, learn of any white man who had perished from snake bite. The government keeps a careful record of all deaths, even of the negroes who go far into the interior to labor at the gold diggings. In looking over the records for a number of years, I found but one case of death by snake bite. Curiously enough the most frequent cause of death among those men seemed to be "accidental drowning."

To even see a snake one usually has to hunt for it. It is easy to find snake stories, however, and those told by the whites are only a bit less imaginative than those of the blacks. A friend of mine, Wilfred Joubert, who has done the Guianas as

and he sit on he horse all day till 4 o'clock an a snake no pass yet so den he turn back and he get he people for come and look, but wen he get back a snake a gone."

Those who believe that any tree flourishes best in its own home, or at least in a country that has the same sort of climate and soil should approve of British Guiana for the *Hevea Brasiliensis*. It is Northern Brazil over again. Humid, tropical, with a long and short wet season with a coastal soil really brought down by the Amazon with fauna and flora almost identical, if it is not the home of the Pará rubber tree, it certainly is next door to it.

It was fully 16 years ago that the first seeds of *Hevea Brasiliensis* were brought into British Guiana and later plants



"HEVEA BRASILIENSIS" AT THE EXPERIMENT STATION, ISSORORO, N. W. D. AGE 1½ YEARS.



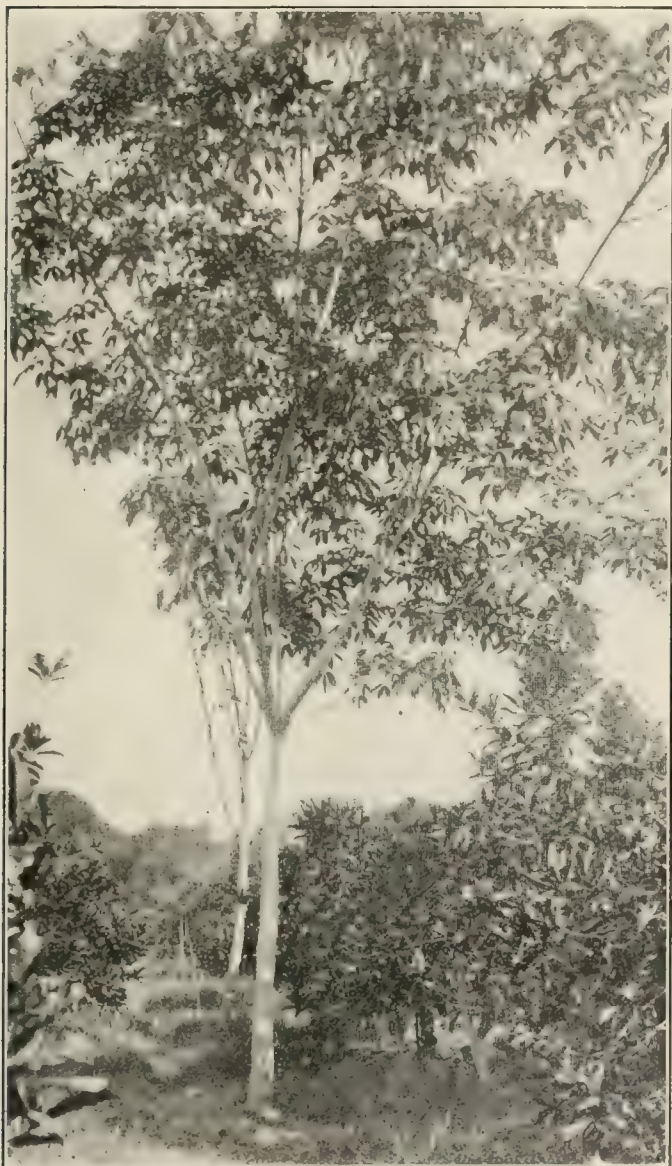
"HEVEA BRASILIENSIS" AT PLANTATION ANNA REGINA, ESSEQUIBO. AGE 2½ YEARS.

thoroughly as any one, lay in his hammock in the bush one night and listened to the following story which is typical. The teller was a big-eyed Guiana negro. His audience a breathless, believing crowd of his own color.

from the first lot of seeds were sent to different parts of the Colony. The result is that there are a few old trees in existence there. About six years ago the botanic gardens in Georgetown began in earnest to import seeds and up to the present time have

raised and sold to planters nearly 200,000 plants of this species.

In addition to this very important distribution, land has been cleared and planted at the government experiment stations at Christianburg, Bonasika, Onderneemig, Pomeroon and Issororo.



"HEVEA BRASILIENSIS" AT GOVERNMENT INDUSTRIAL SCHOOL FARM, ODERNEEMING AGE 4½ YEARS.

These plantings represent several thousand trees, in every variety of soil. A careful record of growth is kept and the future planter will thus have a remarkable fund of exact information to draw from before selecting land and putting in seed.

The Department of Agriculture is nothing if not thorough and it has not only planted Pará rubber at its own stations, but at the stations of the Department of Lands and Mines as well. To-day, therefore, at Turmaturmari, Itaki, Arrawak-Matope, Arakaka and Towakaima, Pará trees are growing and it has been established that the upper reaches of the great rivers and the interior forest lands are well adapted for Pará cultivation.

Planters have also taken, of late, considerable interest in Pará planting. On the sugar estates many experiments have been tried and on the higher reaches the trees are doing very well.

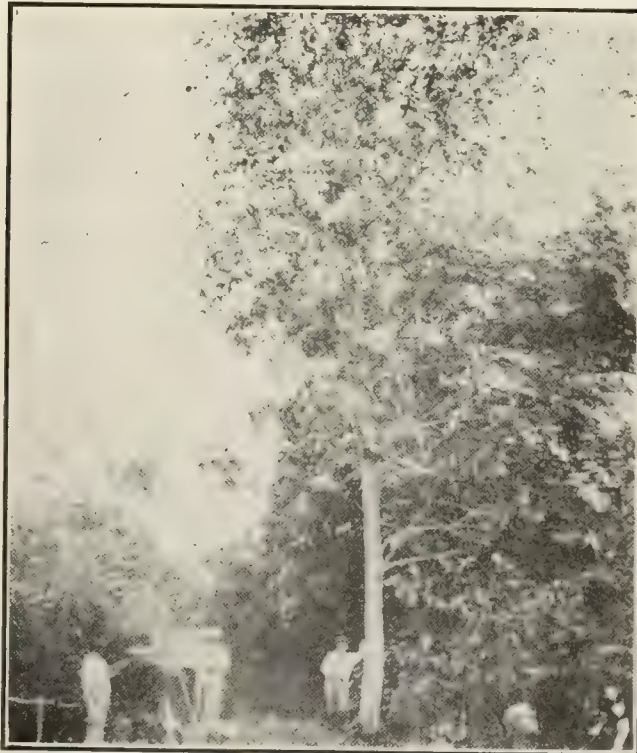
Already one estate on the Demerara river has produced Pará at the rate of 3 lbs. per tree, tapping only three months of the year.

The coagulating method is a compromise between that in use in the Middle East and in Brazil. It consists in coagulating by acetic acid and then smoking, only instead of the Urucuri palm nut they use the fruit of the Cokerite palm.



"CASTILLOA ELASTICA" AT BOTANIC GARDENS.

The department estimates that about 1,000 acres are now planted to *Hevea Brasiliensis* and this area is very rapidly being increased. They estimate also for drained lands, a cost of about



"HEVEA BRASILIENSIS" AT PLANTATION NOITGEDACHT DEMERARA. AGE 11 YEARS. GIRTH 40½ INCHES.

\$70 per acre for the first year and thereafter \$25 per year for upkeep. On higher land the initial cost is \$48 per acre.

The rainfall in the colony is all that could be desired for rubber planting and one can get it in almost any quantity desired and well distributed. It varies from 92 inches on the Essiquibo river to 268 inches in the North West District.

The shipping of rubber from British Guiana is surrounded by a certain amount of red tape that makes some of the new

facilitate matters and be much appreciated by rubber exporters.

Professor Harrison told me of a very amusing instance of planters' generosity in the Middle East. He had sent for some *Hevea* seeds, giving the most minute directions as to their packing and shipment. For example, he specified a parcels post package of eleven pounds, containing 500 seeds not closely packed, with just a little ventilation, etc. The shipper, however, found that the postal cost for 800 seeds would be just the same,



GORGE BELOW THE 700 FOOT FALL OF KNIETEUR.



TUMATUMARI CATARACT, POTARO RIVER.

arrivals rather restive. The course of procedure is about this. The shipper goes to the Custom House and gets a supervisor to weigh the lot. Receiving a memo of the weight he proceeds to the Lands and Mines office to get permission to release the rubber and also to secure a royalty blank. Then follows a visit to the treasury department to pay the royalty. The receipt for payment is then taken back to the Custom House for endorsement. Then come two shipping bills which must be officially signed. After this is the securing of the consular invoice and the submission of all of the documents of the steamship company.

so he put in the extra 300, soldered them up tight to prevent "shucking" and sent them along. Of course they fermented and when they were opened drove everybody away by their fearful stench.

I forgot to mention, in writing of the *Sapium Jenmani*, that Professor Harrison in experimenting finds that the latex develops resin when the tree is tapped continuously. The first and second tapplings give excellent rubber, the third is slightly sticky, while the fourth and fifth are decidedly resinous.

Referring again to balata, the whole business has been beau-



RAILROAD TO MINES.



DEMERARA ESSEQUIBO RAILWAY.

Then follows the wait until the cargo is discharged before the bill of lading is signed, and then the rush to mail it by the same steamer that carries the rubber. It is true that few errors occur and the duty on rubber is very low, only two cents per pound, but if one official could be empowered to do all of the signing and the steamship companies would unbend a bit it would greatly

tifully systematized since the formation in 1910 of the Consolidated Rubber and Balata Estates, Limited. This company acquired 387 balata licenses and has greatly increased the output. There are some half dozen lesser companies operating in balata and about twenty that are really planting Pará rubber, with prospects of a great many more in the near future.

The India-Rubber Trade in Great Britain.

By Our Regular Correspondent

THE general trade of the country is undoubtedly good and this is testified to by the complaint of shipping firms of a shortage of tonnage. At the time of writing we are in the throes of a seamen's and dock laborers' strike, a very serious matter for many trades, but one that probably does not affect the rubber trade to any material extent.

TRADE. CONDITIONS.

Rubber manufacturers generally report themselves as being busy and are quietly buying their forward deliveries of raw material at the present easy prices. Those who did not pay last summer prices for delivery over this year, are congratulating themselves and chuckling silently over the misfortunes of their competitors, who are using rubber which has cost them 6s. or 7s. per pound. This fact of course is ignored by those who want a general reduction of the prices of goods to a level based on fine Pará at 3s. 10d. lb. One notable result of the famine prices of rubber in 1910 has been the increased use of substitutes and reclaimed rubbers. Now that the price of raw rubber has fallen considerably it might be supposed that less of the cheaper materials would be used. This, however, is not so and of course this is a great factor in preventing any important rise in the raw material. Manufacturers watch the returns from the plantations pretty closely and the great increase in this year's output over 1910 and 1909 in the case of the more important companies and they argue that unless markets are manipulated there is no need for higher prices.

Chairmen of plantation companies and others who have to make complimentary speeches about rubber in public are still dwelling strongly on the rubber pavement era, which they say is impending. I asked a prominent manufacturer the other day what he thought of this, and his opinion was that Pará rubber will have to fall as low as 1s. 6d. or 2s. per lb. before the employment of rubber pavement on a really large scale occurs.

It is rather an interesting point as to how much of the raw rubber used comes back to the factories as waste or reclaimed. An authority tells me it is 50 per cent. I wonder if this figure finds general corroboration.

The Mining Exhibition held in Manchester during May was interesting from the point of view of this journal, as showing

COAL MINING AND RUBBER REQUIREMENTS.

the increased utilization of rubber in and about the modern collieries. Of course the application of electricity for pumping, hauling and winding, is by no means a novelty, but it is only in quite recent years that it may be said to have passed the experimental stage and to have had its advantages against steam fully established. Coal cutting machinery is now being increasingly employed, though it must be confessed that there is considerable prejudice against it when worked electrically, on account of its alleged liability to cause explosions in fiery mines by reason of sparking. Trailing cables of special make, for such machines, were on view at the exhibition, prominent among them being those of the St. Helens Cable & Rubber Co. For this class of work The W. T. Glover & Co. have also brought out a special cable, designed to obviate any risk of danger if accidentally damaged. Of late years, as the result of several calamitous explosions, a considerable amount of attention has been given to life-saving appliances, both at home and abroad. In a general way, one may say that the miner's outfit somewhat resembles that of a diver, though a waterproof costume is not required. A good deal of rubber, however, is used in the form of tubing, in connection with the breathing apparatus in the helmet, and as the number of rescue stations is

to be largely increased, rubber tubing for this purpose will be in correspondingly increased demand. Shot firing by electricity is now very largely employed in shaft sinking, and the flexible cables used were prominently on view. Of course there is no direct ratio between the increased use of electricity in mines and the amount of rubber used, because fiber and bitumen insulated cables are employed to a considerable extent for main cables in the shaft. For other applications, however, some of which have been mentioned, the rubber cable reigns supreme and the demand is bound to increase. Some firms who specialize in packings had stands at the exhibition. Klingerite is now supplied from their London factory and the firm report increased sales, though they have to meet close competition which has sprung up in recent years.

In these notes it is not intended to deal systematically with the exhibition or the conferences. This will be done in other

THE INTERNATIONAL RUBBER EXHIBITION.

columns by another pen, though as the material available for notice is so large and varied, I may be permitted to say a few words in addition on my own account. The exhibition was certainly a very comprehensive one and hardly anything of importance, from the tree to the finished goods, was lacking. Although British rubber manufacturers were more strongly in evidence than was the case in 1908, yet the displays they made individually could not compare, as regards space occupied or general attractiveness, with those of the German manufacturers. Of course it may be that the leading British firms do not require any such advertisement, though it was noticeable that the large German exhibitors, such as the Harburg Vienna Co., are by no means unknown to British markets, having done business through their London establishment for many years. In saying this about the manufactured goods exhibits, I am merely dealing with the facts. I am not at all sure that it would have added to the attractiveness or the utility of the exhibition to have had serried ranks of British manufacturers showing macintoshes, garden hose, etc., on the lines of the ordinary shop window. Except to a few business men who might wish to know what their competitors were doing, such exhibits if at all numerous, would have a tendency to lower the Rubber Exhibition to a level with the various trade exhibitions which are held annually in the Agricultural Hall and which have no higher aims than the desire of individual exhibitors to increase their respective business. Of course I do not suggest that the exhibitors in the Rubber Exhibition were there for altruistic motives or were without thought of ultimate benefits to be derived, but compared with the ordinary trade exhibition there was far more information to be obtained by the technical visitor as regards the details of novel machinery and processes.

THE working rubber factory of the Continental Rubber Co. to demonstrate the properties of guayule rubber proved not only

INSTRUCTIVE EXHIBITS.

a great attraction to the public behind the chains, but also of great interest to the technical men of various nationalities who were invited to examine every detail of the plant and the manipulation of the rubber. Such an exhibit must naturally entail considerable expense, but Mr. Van der Linde, who had charge of it, told me that he was more than satisfied with the results. Another prominent working exhibit was the Universal washer of Messrs. Werner, Pfeiderer & Perkins. This was operated in a building immediately contiguous to the exhibition demonstrations being given at intervals to those specially interested. Other modern washing machines which claim

to be superior to Filenderer's were not in evidence. Perhaps the best shows of modern rubber machinery were made by David Bridge & Co., of Castleton, near Manchester, and Francis Shaw & Co., of Manchester, and I was specially interested in the plant for making plantation rubber shown by the latter firm. Among other machinery exhibitors were Messrs. A. Ollier & Cie., of Clermont-Ferrand, whose specialties in rubber machinery are being introduced into England by Mons. Vincent, who is the patentee. Among their specialties are the vertical spreader adopted by the Helsby Cable works and also a rapid high temperature vulcanizing press for tires somewhat on the lines of the Doughty machine, the patent for which was, until it ran out last year, the property of the Dunlop Rubber Co.

The raw rubber exhibits from the principal producing centres were on the same imposing scale as in 1908 without any particular novelties being on view. In manufactured goods the Premier Reforming Co. and the Millwall Rubber Co. were new comers with a variety of re-formed rubber goods.

With regard to the attendance of the public I should think this must be considered unsatisfactory; at no time did I notice any semblance of a crowd and at times the hall was practically empty. A year ago, in the boom times, all and sundry were talking rubber, which is by no means the case at the present time. The disappointed holders of 2s. shares in various wildcat companies were largely in evidence and took every opportunity of getting opinions from exhibitors as to the possibilities of their holdings. I need hardly say that the illness which prevented the editor of the INDIA RUBBER WORLD from coming to London was sincerely deplored by numbers of visitors from home and abroad who had anticipated the renewal of an acquaintance made in former years.

The conferences which were held in the second week of the exhibition must be considered quite successful. They were well attended and it was only the time limit which prevented the discussions on many papers being prolonged. Considering the many attractions in London during the week and the tropical weather that prevailed it says a good deal for the interest in the conferences, that the attendance, both morning and afternoon, were so satisfactory. The arrangements also were much more satisfactory than in 1908, the papers to be used being announced in good time before the sittings. In the short space at disposal. I shall not attempt even a summary of the proceedings, but merely make casual reference to one or two points. Dr. Huber, in a lengthy paper on the wild rubber reserves of the Amazon, referred to the various species of *Hevea*, saying that the southerly part of the Amazon basin contained most of the true *H. Braziliensis* trees, while the northerly regions contained mostly the other *heveas* which gave a weaker rubber. The large area of untapped trees was emphasized. He suggested with regard to the deficiency in tensile strength of Eastern plantation rubber compared with Brazilian fine, that the seeds had been mostly obtained from the regions where the lower quality *heveas* abounded, a remark which was evidently not to the mind of many planters present. The point seems an important one and doubtless more will be heard of it. In the discussion Mr. Terry and others referred to the use of the term "reserves" and inquired when there was a prospect of their realization, the reply given at some length indicating that ten years might have to elapse before the transport facilities would be such as to allow of any very large increase of production from the virtually unexploited regions. In the course of the discussion Dr. Esch referred to the cut sheet manufacture in Germany, where he said that although plantation had been used a year or two ago and found quite satisfactory it had recently proved unsatisfactory. Dr. Stevens said that he had recently seen cut sheet which had been made by an English rubber works from plantation rubber and it was quite first class. Mr. Terry said that other manufacturers might not agree as to the quality of the cut sheet Dr. Stevens referred to and said

that really hardly any progress had been made in using plantation rubber for this purpose since the last exhibition. The manufacturers had no confidence that they could go into the market and buy 10 or 20 tons of plantation of absolutely uniform quality. They could do this in the case of Brazilian fine and have no anxiety whatever as to the quality of the cut sheet. There seemed to be great ambition in the past of Eastern planters to cut out Brazil in this particular market, but looking at the whole of the circumstances he doubted whether it was really worth while troubling to enter into the competition.

The thorny question of the utility of the viscosity test for raw rubber was debated at some length when Dr. Schidrowitz read a paper on the subject. To judge by the tone of the discussion the doctors seem to differ a good deal and it is evidently not time yet for every rubber plantation or factory to buy the necessary apparatus as a requisite part of the laboratory equipment.

The strike of dockers and carters in the first week of July in Manchester proved a serious matter for local trade. Owing to the riots large numbers of extra police and military were brought to the city. One of the immediate consequences was the closing of many factories owing to inability to obtain coal. Important rubber works were among those affected and it is unnecessary to dwell upon the great inconvenience which has been caused to business.

MANCHESTER TRADE

The strike at the Openshaw and Droylsden works of the Gorton Rubber Co. has been settled, concessions having been made on each side. One of the subjects in dispute was the desire of the management to get each worker to sign a form agreeing to be searched when leaving the works. The company have had to prosecute on several occasions in cases of pilfering and they felt it incumbent on them to take extreme measures.

Col. R. K. Birley, C. B. V. D., of Messrs. Chas. Macintosh & Co., has for the second time been elected chairman of the India Rubber Manufacturers Association. He is also chairman of the Beaufort Borneo Rubber Co.

KINDLY EXPRESSIONS FROM LONDON.

Says *The Financier*, London, in an article describing the International Rubber Exhibition:

"A matter for real regret is the fact that we shall not have among us the editor of the INDIA RUBBER WORLD, of New York. Mr. Pearson is suffering from an affection of the eyes, the aftermath of fever contracted when exploring the rubber resources of the Guianas on behalf of his journal. Mr. Pearson's absence from the conference of specially-appointed delegates from all the world's rubber centres who are to meet and discuss matters of import to the industry during the run of the exhibition will be the more widely regretted by those who remember the tower of strength he proved himself on the side of common sense at the 1908 conference, held in connection with the first International Exhibition at Olympia. We had been anticipating with no small delight his views on 'synthetic' rubber, and as among the exhibits at the forthcoming exhibition will be demonstrations of one of these processes, a text to hand would have been available for the editor of the INDIA RUBBER WORLD. As it is, however, we have no doubt that the 'synthetic' rubber exhibitor will receive from other recognized experts fortunate enough to witness his demonstrations all the attention and criticism which he courts."

(The affection of the eyes mentioned above is fast disappearing. Except in strong sunlight the editorial optics are again fit for duty. The cause of the trouble was probably poisoning from "Manchaneel" latex.—The editor.)

A valuable deposit of asbestos is reported from Las Vegas, New Mexico. It is of the chrysolite variety, and is said to be accessible in large volume.

Some Rubber Interests in Europe.

GERMANY.

MITTELDEUTSCHE GUMMIWAARENFABRIK, VORM LOUIS PETER. The last meeting of the directors of the company, which lasted, with a noon recess, from 9 o'clock in the morning until 10 o'clock at night, and wound up with the resignation of the entire board, with the exception of Councillor Peter and his legal advisor, was decidedly interesting. Commercial Councillor Peter was accused of making unauthorized written statements, of revealing to the press important company secrets, and of meddling with the manufacturing operations. The half yearly balance of March 31 showed a loss of several hundred thousand dollars and a more unfavorable result of the business of the current half-year, ending September 30, was predicted, than for the preceding year. Before adjournment the directors summoned an extraordinary general meeting to convene on July 31. The above company has a producing rubber plantation in Sumatra.

The Gummi Industrie Hugo Thele, Niedersachsen, of Nienberg, is terminated by the expiration of the firm agreement.

Commercial Councillor Peter, head of the Mitteldeutsche Gummifabrik, vorm. Louis Peter, is reported as having met with a serious accident. While driving, the carriage horses became unmanageable and ran away in the direction of a precipice. Recognizing his danger, Mr. Peter jumped from the carriage, sustaining painful but not dangerous injuries.

Gummiwerke Elbe, Hamburg, reports for 1910 that while business during the first nine months was good, for the last three months it was decidedly bad, which, with the fact that the company had stocked up with rubber at high prices and lost heavily on the decline, causes the directors to recommend that the profit for the year, of 81,964 marks (\$19,507) be applied exclusively to writing off and reserve purposes. It was also decided to increase the capital by the issue of preference shares to the value of 750,000 marks (\$178,500). Of this sum a syndicate had agreed to take 500,000 marks at par, the remainder being in like manner provided for.

A LEADING GERMAN ASBESTOS AND RUBBER MANUFACTURER.

The founder and active head of the firm Asbest und Gummiwerke, Alfred Calmon, is so well known in the United States and Canada that a sketch of his industrial accomplishments is sure to be of interest.

The firm of Alfred Calmon was registered in the Hamburg Commercial Register on the twelfth of January, 1886. Its operations at first included the manufacture and sale of steam packings and mechanical rubber goods, with many asbestos and rubber specialties.

The business rapidly developed and in 1890 they became interested in the asbestos works of Otto Köhnel & Sohn, in Hanover, and the steam packing factory was transferred to that city. On the 27th of December, 1893, the Asbest-und Gummiwerke Alfred Calmon G. m. b. H. was established with a capital of \$128,520. The founders of the firm were Alfred Calmon and the Allgemeine Elektrizitäts Gesellschaft, Berlin. The new company took over the factory and business of the firm of Otto Köhnel & Sohn, and rented the property belonging to the Allgemeine Elektrizitäts Gesellschaft, in Berlin.

In 1896 the business was turned into a public limited company with a capital of \$357,000. The further rapid developments are demonstrated by the following increases in the capital of the company, viz:

1897 to \$595,000; 1899 to \$714,000, and then to \$1,071,000; 1906 to \$1,428,000.

The rubber business developed to such an extent as to lead to the erection of a rubber factory in 1899, the manufacture of rub-

ber shoes being added and later cycle and automobile tires.

The asbestos factory, situated in Berlin, occupies an area of about 150,000 square feet, and the rubber factory takes up about 410,000 square feet.

The company has many branches and is also interested in several other concerns, and trades in all parts of the world.

It is also said that the Calmon interests own and control large asbestos mines both in Canada and in Russia.

Mr. Calmon's life has been one of industry, of extraordinary energy coupled with clever understanding and keen foresight. He



ALFRED CALMON.

was one of the pioneers of the German asbestos industry. The field of operations afforded in asbestos-spinning, weaving and millboard manufacturing was not enough so he added rubber lines and today his company is one of the great German producers.

GENERAL DIRECTOR LOUIS HOFF HONORED.

GENERAL Director Louis Hoff, of the important firm of Vereinigte Gummiwaaren Fabriken, Harburg-Wien, Harburg-on-the-Elbe, Germany, has been appointed Royal Prussian Commercial Counsellor, which is a very distinguished honor. Mr. Hoff has been with the Harburg company since 1877 when he came with it as the representative of the works for Paris. Upon the death of General Director Gerig he was appointed Commercial Director and acted in conjunction with the late Commercial Counsellor Karl Maret. Upon the death of Mr. Maret he became sole head of the great company.

Mr. Hoff has taken a vital interest in the city of Harburg both in the building up of the rubber industry and the creation of galolith. He also began a pension fund among the employees, the capital of which is now \$325,000. Of the Central Association of German Rubber Goods Factories he has for many years been president, and a very popular and capable official he has proved himself. He is also a member of the consulting board of the Imperial Statistical Office, a member of the local Chamber of Commerce and of the committee of the Commercial Diet. This last honor was conferred upon him on the occasion of the celebration of the Fiftieth Anniversary of the city of Heidelberg.

Mr. Hoff is well known in industrial circles all over Europe and has many friends in the United States.

SWEDEN.

HELSINGBORGS Gummifabriks Aktiebolag has set aside 10,000 crowns (\$2,680) for the establishment and maintenance of a day-nursery for the infants of women working in their factory, and for the pension and benevolence fund, 2,000 crowns (\$536).

GREAT BRITAIN.

So much attention was recently bestowed by the public on the new Navy airship that it may be of interest to note that in the construction of the gas bags, the famous "North British" fabric, manufactured by The North British Rubber Co., Limited, Castle Mills, Edinburgh, Scotland, was used.

The directors of Harrisons & Crosfield, Limited, have declared a dividend on the cumulative preference shares at the rate of $5\frac{1}{2}$ per cent. per annum for the three months ending July 15.

Much is claimed for Pflumatic, a filling for tires, that takes the place of air and is asserted to insure total immunity from tire troubles.

REFORMING RUBBER IN GREAT BRITAIN.

The first essay in re-forming rubber has been made, in London, extending over a period of seventeen months, in the new works of the Premier Re-Forming Co., Ltd., a subsidiary company of the Endurite Manufacturing Company of London. The Endurite Company owns the German patent for re-forming old waste rubber. To make this matter quite clear, there is a French patent for a similar process which is being worked in London by another company. Further there are several English companies re-forming rubber waste under English patents.

The Premier Re-Forming Company is the strongest of the six English companies. Their chairman presented his report to the shareholders at the ordinary general meeting held in London on June 14th. Something like \$75,000 have already been spent on machinery installation, as against earnings \$2,885 gross profit, the company having operated about eighteen months. Re-forming already has absorbed about \$167,525 of English capital. The chairman stated that the capacity of the Premier company's new works is equal to a production of 10 tons or even 15 tons per week.

THREE NYASALAND RUBBER PATENTS.

THE registration of three interesting rubber patents has been recorded by the Nyasaland Government Gazette.

One in the name of Leopold Valour is for improvements in machines for separating caoutchouc from the bark of rubber-yielding plants and for similar purposes.

A patent application has been accepted from Harold Theodore Grannele van der Linde, for a method of extracting particles of rubber from substances with which it is associated, while another has been received from William Appleton Lawrence for process and apparatus for extracting rubber or rubber-like substances from its vegetable sources.

A LARGE VACUUM DRYER DRUM.

THE Buffalo Foundry & Machine Co. recently cast an exceptionally large drum for a Rotary Vacuum Dryer. It was 12 feet long and 5 feet in diameter. The drums are generally made of dense air furnace iron, but in this case it was necessary to use a high quality bronze, owing to the fact that the extract to be dried would become discolored if it came in contact with iron.

It required 16,000 pounds of metal to pour the casting and on account of this large quantity, it was necessary to melt the metal in a 48-inch cupola.

Work is being actively pushed on the new building in course of erection for the Stoughton Rubber Co. at Stoughton, Mass. The concrete foundations are complete, and a large gang of mixers and workers are busy raising the walls.

THE USEFUL PONCHO.

THE use of the poncho, for some reason, seems to be almost wholly confined to those who live in the tropics or sub-tropics. Possibly this is due to its usefulness when one rides on horseback. It is, however, one of the simplest and best of



SQUARE PONCHO.

rain shedders. For automobilists it is ideal, while for those who do much walking in the rain, it is umbrella and coat combined.

American soldiers in the Philippines have found that a part, indeed about half, of their duty when out on a "hike" consists of crossing streams and keeping their accoutrements dry. They have, therefore, learned to make rubber boats out of ponchos.



PONCHO BOAT READY FOR LAUNCHING.

The illustration shows a boat, made of one rubber poncho, two rifles, two sabers, and straps, two shelter tent poles and their straps

WHY NOT TAP FOR CAUCHO?

THE sentiment in the rubber producing regions of Brazil today is more favorable than ever before toward planting, colonization, or any kind of procedure that shall assure continued supremacy in crude rubber. Perhaps, therefore, it would be wise to start with cauchó. There are great areas in which the *Castilloa Ulei* grows that are still untouched. The present practice of cutting the tree down to get the rubber does not seem necessary, no matter what the claims of the gatherers may be. According to their tales, new trees grow from the stumps and are ready for cutting in seven years. Suppose that be true (although seventeen years would seem more reasonable), would that be as good as an annual tapping? On the other hand, if cutting the tree down is better policy, why should not planted *Castilloas* be cut down every few years and their rubber extracted all at once.

It is wholly within the bounds of reason that a cauchó expedition, outfitted with proper tapping tools, could get as much rubber and repeat the process on the same trees, at least once

a year and do it indefinitely. If this be true it would mean seven times as much cauchó. It is worth considering and experimenting with.



TAPPING BASE OF CAUCHO TREE BEFORE FELLING.
(Copyrighted by Algot Lange.)



CAUCHO TREE FELLED FOR THROUGH BLEEDING.
(Copyrighted by Algot Lange.)

Progress of Rubber Planting.

THE GENERAL RUBBER CO. IN SUMATRA.

THE General Rubber Company, New York, has completed its negotiations for exceedingly large land holdings in Sumatra. It has taken over the properties of the New Asahan Tobacco Co., in which there are 70,000 acres of land, most of which is suitable for *Hevea* culture. The ground is most of it already cleared, and near the rivers thoroughly drained. There is plenty of labor available, and it is planned to have 20,000 acres planted to rubber before 1912. After that the area will be continuously extended year by year. Mr. Davis, Eastern representative, is on the ground, and has for adviser Dr. W. J. Gallagher. Before taking over the New Asahan estates the company secured two concessions for the adjoining lands, one of 10,000 acres, the other 40,000 acres, making a total of 120,000 acres.

The plantation is situated some 12 miles from the seacoast and is not far from Medan. Tanjon balie is the port nearest to the estates. The New Asahan Tobacco Co. produced nearly 5 per cent. of the total tobacco crop of the island of Sumatra. In clearing, draining, in establishing administration buildings, laborers' houses and coolie lines, great sums were expended. There are more than 100 miles of good roads, while the agricultural drains cost more than \$1,000,000.

While the General Rubber Co. are at present the owners, it is said that the planting will be conducted by a subsidiary corporation known as the Holland-American Rubber Planting Co.

Speaking of the project, the *Times*, of Ceylon, says: "It is a bold enterprise, and, though the opening of such an extensive area may disturb present estate owners, what will strike most people, no doubt, is its significance as an indication of confidence in the future of plantation rubber, and more particularly of confidence in the location of the great industry in the Middle East. The American company took every care to inquire into the possibilities of planting in Brazil before finally deciding that the Middle East offered superior advantages in the matter of labor supply and transport."

That there is much rubber planting interest in Sumatra has long been known.

During the first six months of 1910 there were formed in Sumatra companies interested in rubber culture: 11 Dutch, capital \$4,940,000; 17 British, capital \$10,224,000; 1 Belgian, capital \$700,000; 1 French, capital \$240,000; 1 Franco-British, capital \$300,000. There are at present about 100 estates growing rubber in the island.

So little is known of Sumatra in industrial circles that a brief story of the island that has attracted the attention of the officials of the United States Rubber Co. should be apropos.

Located south and west of the Malay Peninsula, between 5° 40' N. and 5° 59' S. and 95° 16' and 106° 3' E., Sumatra, next to Borneo, is the largest of the great Sunda group of the East India Islands. It is separated from the Malay Peninsula by the Malacca Strait and from Java by the Sunda Strait, and has an area with the adjacent islands, excepting Banka and Billiton, of 178,538 square miles. Of volcanic formation, the island is traversed from end to end, on the south side, by a range of mountains, which includes several recently active, and numerous extinct volcanoes.

The first authentic record of the island was made by the Portuguese, Siguiera, in 1599, although Marco Polo had previously visited it on his way to the East. In 1599 the Dutch established themselves there, and in 1698 the English founded a settlement at Bencoellen, which they exchanged in 1824 for Dutch holdings in India. At present, about two-thirds of the island is under Dutch government and is divided into seven residencies: Padang, Kota Radja, Bencoellen, Telok Betong,

Siboga and Medan. There are also a number of semi-independent states, including the kingdom of Acheon, the Battah country, the kingdoms of Siak, Djanebra, Indragari and Kampan, which are under Dutch control, with a few tributary principalities and protectorates. The population of Sumatra, according to the latest computation, is about 5,500,000, including about 92,000 Chinese, a little over 5,000 Europeans, 2,478 Arabs and 7,133 foreigners, the remainder being natives. The most populous settlements are on the west coast, where Padang, the capital of this section, had a population of 35,158 inhabitants at the last enumeration.

Lying immediately under the equator, which crosses the island diagonally at about its center, the range of temperature is high, but the climate is fairly healthy; the rainfall, largely tropical in character and varying with the locality and altitude, ranges from 139 to 78.7 inches per annum.

Nine-tenths of the native population of Sumatra is engaged in agricultural pursuits, the remainder being occupied in cattle raising, fishing, navigation and in collecting the products of the forests which cover the greater portion of the island, the heavy timber extending down to the coast line. Included in the indigenous growths is the *Dichopsis gutta*, which yields gutta percha.

Some rubber is included in the products exported from the island, which include the much prized Sumatra tobacco, some coffee, spices, gums and other forest products. The laborers employed in agriculture and on the plantations consist almost entirely of Chinese coolies, with a few Malays.

TO PLANT RUBBER IN BRITISH GUIANA.

THE Ithaca Development Co. has been organized with a total capital stock of \$500,000 in 50,000 shares of \$10 each, in addition to \$150,000 of 6 per cent. ten-year convertible bonds. It plans the development of 300 acres a year of a rubber plantation of 1,500 acres and a subsequent extension to 3,000 acres. The property is on the Essequibo River, about five hours by steamer from Georgetown. There is included in the property a granite quarry, directly on the water front and now in operation; a quantity of valuable hardwood timber; the burning of Barbados lime, using the wood obtained in clearing the land; and finally the interplanting of the rubber trees with cassava.

Of the \$500,000 capital stock \$50,000 is given for the property and as part payment for the services of Mr. F. Harvey, who is to remain with the company for five years, in charge of the quarry and limestone business and as assistant superintendent of the plantation. For the property there will be given the further sum of \$50,000 in cash, which sum includes expenses of organizing and incorporation both in the United States and in Demerara.

It is proposed to sell the \$150,000 of convertible bonds at par.

According to the calculations presented the company expect to pay 6 per cent. on the convertible bonds for the first five years, and in addition 6 per cent. on the issued stock in the second to fifth year, and in the sixth year pay a dividend of 20 per cent. on the entire \$500,000 of stock, rising to 90 per cent. in the fourteenth year. The purchaser of the bond would therefore, it is estimated, get 6 per cent. on his money for the first five years and then convert his bond into a stock which will yield him an income increasing from 20 per cent. to 90 per cent. The calculations are based on the sale of the rubber at 75 cents per pound and on a cost of 25 cents per pound after the first year of tapping.

FINE SAPIUM GROWTH.

MR. QUINCY TUCKER, who is managing the Boston Rubber Estates in British Guiana, sends us a photograph of *Sapium*



SAPIUM JENMANI 1 YEAR AND 9 MONTHS OLD.

Jenmani, one year and nine months old. This was planted by a previous tenant and while the growth is remarkable Mr. Tucker is very wisely interplanting with *Hevea Brasilensis*.

COMPARISON OF CEYLON AND MALAYA RUBBER PROSPECTS.

LOOKING at the matter from an investor's point of view, Mr. R. E. Stephens, a retired London merchant (according to the *Ceylon Observer*) when visiting Colombo, expressed the opinion that the prospects of Federated Malay Companies were better than those of Ceylon corporations. This he attributed to climatic conditions and to the flow of latex in Ceylon not being so good, although the trees are large and the growth good. At the same time he considered the management to be much better in Ceylon.

He had recently transferred his holdings in Ceylon shares to those of the Federated Malay States companies.

MALACCA'S PROGRESS.

ACCORDING to the official report of the Malacca administration, the year 1910 was one of marked prosperity; the revenue being equal to about \$700,000 (gold) or nearly double that for 1909. Land premiums amounted to nearly \$60,000 (gold), or more than the combined premiums of the three previous years.

The rubber exported represented nearly \$1,500,000 (gold) against \$400,000. Over 35 companies are working, with an aggregate capital of more than \$7,500,000 (gold).

TWO NEW CEYLON LATEX PATENTS.

ACCORDING to the *Ceylon Gazette*, the specification has been accepted of a patent granted to Mr. William Francis Barnes for an appliance to hold cups used for the collection of latex from rubber trees when not in use. This device is a combination of a clip for holding an empty cup and a tablet for indicating the number of the tree to which clip and tablet are affixed.

In respect to an invention by Mr. Henry Erskine Watt, of Ederapolla, Yatiyantota, Ceylon, a patent specification has been accepted for a tool intended to cut a grooved channel in the bark of a tree, by means of two curved and hooked cutting blades, hooked to the desired curve of the channel to be cut. The cutting is effected by pushing or pulling and from left to right or from right to left.

SEVENTY THOUSAND POUNDS OF RUBBER BURNED.

PENANG advices state that through a fire which occurred on May 31, at the drying shed of the Gedong Rubber Estate, the building and the 70,000 lbs. of rubber it contained, were totally destroyed. The losses are understood to be covered by insurance.

PLANTATION NOTES.

SCOTTISH-MALAY RUBBER Co. reports 31,002 pounds of dry rubber collected for 1910, against an estimated yield of 25,000 pounds. The net price received was 5s. 11/6d. per pound, the profit for the year to December 31, 1910, being stated at £5,368.79 (\$26,125). The company acquired 170 acres of additional land during the past year, making a total of 2,440 acres. The company reports 32,023 pounds of dry rubber harvested for the six months ending June 30, 1911, compared with 8,476 pounds for the same period in 1910.

VALLAMBROSA RUBBER Co., LIMITED, reports 91,300 pounds of rubber harvested for the three months ending June 30, 1911, compared with 92,500 pounds for the same period in 1910. At their meeting, held June 30, 1911, the directors resolved to carry £15,000 (\$72,997) to a reserve fund, available for development expenditure, and to recommend to the shareholders a final dividend of 2 shillings per share, making 175 per cent. for the year ended March 31, 1911.

THE UNITED SERDANG (Sumatra) RUBBER PLANTATIONS, LIMITED, harvested on its estates for the six months ended May 31, 1911, approximately 157,683 pounds of rubber, of which 115,089 pounds was reported sold at a gross average of 5s. 4¼d. per pound.

THE PATALING RUBBER ESTATES on June 21 declared a first interim dividend of 50 per cent. in respect of the financial year ending December 31, 1911.

BUKIT RAJAH RUBBER Co., LIMITED, in its annual report for the year ended March 31, 1911, shows a rubber crop for the year 1910-11 of 437,997 pounds, for which a gross price was obtained of 6s. 0. 29d. in London. For the current year the manager estimates a crop of 550,000 pounds. It was proposed to pay a final dividend of 70 per cent. on the ordinary shares, making 150 per cent. for the year.

BAMBRACKELLY (Ceylon) TEA AND RUBBER Co. for the year ended March 31, 1911, reported a crop of 16,540 pounds of rubber, the cost of production of which was 2s. 8½d. per pound, and the net average price realized 5s. per pound. The estimate for the current year is 40,250 pounds of rubber.

THE TELOK DALAM Co., LIMITED, of Antwerp, Belgium, has a plantation at Asahan, Sumatra, of 5,870 acres, of which 1,069 acres are planted with trees 4 to 8 years old, and 948 acres were planted in 1910. The first year 14,733.3 pounds of rubber was collected.

SUNGI DANGAR (Malay) RUBBER COMPANY. June 14. Capital £70,000 (\$340,655), to carry on business as rubber planters and manufacturers of rubber, gutta percha, gums, etc., and to adopt an agreement with the Pioneer Rubber and Oil Syndicates, Limited. First directors: C. H. Meares, R. W. Harrison, C. Fetherstonehaugh, C. Henley and K. Stevens.

KUALA SELANGOR RUBBER Co., LIMITED, at the fifth annual meeting of shareholders, adopted a report declaring a final dividend of 30 per cent. for the year ended December 31, 1910. The rubber collected for the year was 40,000 pounds, against an estimate of 19,800 pounds. The estimate for the current year is 195,000 pounds.

A COAGULATOR FROM TOBAGO.

TOBAGO is a beautiful tropical island close to Trinidad, British West Indies. The planters there have gone in for *Castilloa* very extensively. They have also evolved their own methods of tapping and coagulating. The illustration is from a photograph of



SMITH'S CENTRIFUGAL COAGULATOR.

a coagulator, invented by one of the planters, Mr. H. S. Smith. It is in brief a centrifugal, the bowl of which is fitted with a canvas screen. This catches and holds the coagulated rubber and finally delivers it in the form of a clean sheet. The process has a variety of simple and ingenious adjuncts that fit it for the purpose to which it is successfully put.

RUBBER INTENTIONS AT PARA.

TO THE EDITOR OF THE INDIA RUBBER WORLD:

SIR.—I hasten to explain in reference to the article, "Brazil and Valorization," in your issue of June 1, that what the Brazilian States are contemplating is *not to wash all rubber*, but to wash all the scrap, sernamby and other low grades which are now shipped in an unrepresentable and inconvenient state both as to bulk and appearance. But even supposing it was contemplated to wash all rubbers, there is evidence of the most valuable class that rubbers improve after being washed and cured if kept in the dark. It might also be mentioned that those who are in contact with Their Excellencies, the Governors of both the States of Para and Manaos, know that neither of them desire to assist, nor will in any way act with the avowed purpose of raising the prices of rubber to exorbitant figures. What they are very anxious to obtain is a reasonable level for the rubber market, and the stability of prices, absolutely in accordance with the laws of supply and demand. In this they have the concurrence of every intelligent manufacturer, and the producers would hail with delight the consummation of that desideratum.

As a preliminary measure, the laws referred to have been

passed, but this does not mean that the administration will act rashly or in defiance of common sense and commercial principles. The writer, for one, has noticed that Brazil, on account of its distance from the markets where its products are sold, is always liable to be misunderstood. Whilst every publisher is desirous of venturing an opinion upon Brazilian matters, and rubber speculators in shares and raw material are always influencing the public to think with them scarcely one in one hundred times do they do Brazil justice at the beginning of any discussion as to its commercial development and intentions. And some who may have retracted, honorably, some of their unjust commentaries, very often let matters slide and never try to undo wrong impressions created by their hasty conclusions.

Wrongly or rightly, the valorization of coffee is an accomplished fact, and not such a commercial heresy and ignominious failure as many foreigners predicted.

I venture to predict that the *stability of rubber markets* (not *valorization*, as it has been dubbed, wrongly, everywhere) will be brought about in due course and I feel confident that once more Brazil will be given credit for acting cautiously, and in the common interest of both the producers and consumers of one of its most valuable exports—not as our hasty neighbors think we will do.

Yours truly,

PARAENSE.

Para, June 23, 1911

AN ENTERPRISING SUGGESTION.

TO THE EDITOR OF THE INDIA RUBBER WORLD:

SIR.—I would greatly appreciate advice from you as to the practicability of shipping rubber seed ("semilla de goma") from Brazil to the East Indies; also the cost of freight from New York to Malaysia and other points in the East where rubber planting is in progress.

Some months ago I read an article in your publication concerning an American establishment at Goebilt, Borneo. If it would not be too much trouble, would you kindly refer this letter to them, and to any other firms who might be interested, requesting them to quote a price per hundredweight, f. o. b. New York. The cost of gathering and preparing the seed for shipment would, of course, be great; but I understand that seedlings from the Amazonian species are showing the best results in the east.

Yours very truly,

W. H.

Construction Office, Madeira-Mamoré

Railway, Porto Velho, Brazil.

[There is absolutely no market for Pará rubber seeds in the Far East. With nearly 1,000,000 acres planted to rubber trees they have so much seed that they are already crushing it and making oil out of it. Besides the cost of collection there is almost nothing. Further than this one has to know how to ship seed in the most expert manner or they will perish. With regard to the American company at Goebilt, Borneo, they are not a planting company at all, but are at work on wild producers.—*The Editor.*]

RUBBER FROM NATAL?

ACCORDING to the London correspondence of the *Times* of Ceylon, a tree, locally known as the *Tirucalli*, which affords a new source of rubber, has been discovered to abound among the dense scrub in the northern parts of Natal. This tree is said to yield a sticky fluid, containing 10 to 20 per cent. of fine rubber, in conjunction with 50 per cent. of valuable resin. A concession, covering an area of 600 square miles, is reported to have been obtained by a company established for the purpose of exploiting the exudations of the *Tirucalli* tree.

While a high percentage of resin is said to be undesirable in rubber, the Association of German Paper Manufacturers is offering a liberal reward for the discovery of a substitute for American resin, so that, if correct, this new source of supply is of interest for two important branches of industry.

Mexican Rubber Plantation Notes

By a Special Correspondent.

APROPOS of the remarks in THE INDIA RUBBER WORLD of June last under the caption of "Theatres or Experiment Stations," it may not be generally known that a few years ago the Mexican Government had an opportunity of establishing a botanic garden and experiment station under exceptionally favorable conditions. The idea originated with J. C. Harvey, whose special fitness for the direction of such an enterprise was well known, his credentials including personal recommendations from a number of men eminent in botanic science. Mr. Harvey's proposal embodied the offer, as a free gift to the government, of his own valuable collection of rare indigenous and exotic plants at La Buena Ventura, conjointly with the offer, likewise free, on the part of the Mexican Mutual Planters Company, of Chicago, owners of the estate of La Junta, of an ample extent of forest land conveniently located for the purpose named. By means of suitable introductions and the aid of prominent officials in Mexico City the Departamento de Fomento was approached and negotiations initiated. After the lapse, however, of some months, during which Mr. Harvey paid several visits to the capital in furtherance of the project, its discussion was abruptly terminated by an announcement on the part of the authorities concerned that the matter had been duly considered and could not be entertained. One of the principal objections advanced against it was the fear that students of botany going down into the malarial regions of the rubber country would pay the penalty of their temerity by early and sudden death! At the time referred to rubber planting was at its height in Mexico, and it can hardly be doubted that, had such an organization come into existence then, providing means of systematic study, on scientific lines and under actual field conditions, of the formidable array of problems connected with the cultivation of *Castilloa*—many of which have even yet reached but partial or tentative solution—the status of the industry in this country today would have been very different. For nobody will deny the immense value of the practical assistance rendered to planters of *Hevea* in the Far East by the botanic gardens and experiment stations at Peradeniya, Singapore, Penang, etc., under such famous workers as Ridley, Willis, Wright, Carruthers and many more whose names are intimately associated with the technics of rubber cultivation. In failing to come into line in the direction indicated, Mexico has lost a great opportunity.

The planting on El Chival estate, of the Orizaba Rubber Plantation Company, of Chicago, Illinois, situated in the Department of Palenque, Chiapas, was completed in 1909. The total area in rubber is 1,528 acres, the estimated number of trees being 344,000, representing an average of 225 to the acre. The product of the tapping season of 1909-1910 amounted to 1,550 pounds of rubber, which was sold at \$1.75, gold, per pound. The current season's tapping operations were delayed several months awaiting the arrival and setting up of plant, which consists of a washing and crèping machine and hydraulic press, by Messrs. David Bridge & Co., Limited, of Castleton, Manchester, England, and a Fairbanks & Morse gasoline engine. A hydraulic ram has been installed in the Arroyo Chival, furnishing running water to all departments and keeping tanks of 5,000 gallons' capacity full, for use in case of fire. A rubber mill building, 48 feet by 56 feet, with cement floor, has also been erected. A shipment of 1,700 pounds of crèped and blocked rubber has just been made to New York.

Of what is known as the Markley group of rubber plantations in eastern Chiapas, that of Lumijá, near the town of Salto de Agua, was turned over to the stockholders two years ago, and tapping has been proceeding since. The planting on the Wis-

consin estate of the Wisconsin Rubber Company, in the same district, has also been completed, and the property passed into the hands of the stockholders last month. The planted area is 4,000 acres, with 640 trees to the acre. The transfer of the adjacent Philadelphia estate of the Mexican Plantation Company took place on the 1st of February, 1909, and the Development Company is now going ahead under a new contract on behalf of the stockholders. Tapping was commenced on this estate on the 18th of July, 1910, with the Smith knife, three or four V-shaped cuts being made on each tree. The yield per tree has run from one-and-a-half to three-and-a-half ounces of dry rubber, the age of the trees ranging between six and nine years, the larger yield naturally coming from the older trees. The latex is treated by a special process devised by the manager, Mr. H. H. Markley, no coagulant being employed. The latex is first strained, as usual, into tanks, and five parts of water added. Twelve hours later the water is drawn off, and the residue, or rubber cream, is dried on a revolving drum, heated by steam, the latex cream being fed from a pan below. This pan is raised by means of a lever until the cream comes in contact with the drum, the surface of which, as it revolves, becomes coated with the cream. The pan is then lowered and the coat of cream on the drum allowed to dry—some seven minutes sufficing for the purpose—when another coat is applied; this operation being repeated until the successive layers of latex cream have attained a total thickness of about a quarter of an inch. The product is then removed in the form of a sheet of rubber 3 feet wide and 18 feet long, weighing approximately 50 pounds. In packing for shipment, two such sheets are rolled up together and covered with a *petate*, or piece of native rush matting.

Some tapping has also been done on the Iowa plantation of the German-American Coffee Company (owning the extensive coffee estates of El Triunfo at Tumbalá, near Salto de Agua), acetic acid being the agent used in this case for coagulating the latex.

The Rio Michol and San Leandro plantations, situated in the valley of the Rio Michol between the towns of Salto de Agua and Palenque, have been tapping for a couple of years, and are turning out rubber of fine appearance. On these estates a tapping tool similar to the Smith knife is used, and the latex converted into rubber by means of calorific action. After the usual washing, the resultant cream, to which a small amount of formaldehyde is added (for the diminution of albuminous matter), is put into porcelain lined kettles, each holding two liters, and immersed in boiling water. In fifteen minutes the cream is brought to boiling point and coagulation occurs. The content of each kettle is then turned into a frame or mould, and subjected to pressure. A dozen or more frames are placed on top of each other and pressed simultaneously for a period of twenty-four hours, when the rubber is removed to the drying room.

The effect of the revolution in Mexico, combined with more recent political developments, has been to create widespread demoralization in the agricultural labor element, with serious consequences to planters generally, almost all of whom have thus suffered more or less, while in some instances field operations have been completely paralysed. The "Maderistas" have released large numbers of *enganches*, or indentured men, on various estates, which action has tended to breed discontent amongst the voluntary laborers, who now feel that they must stand out for shorter hours or smaller tasks and higher pay. (The usual wage has thus far been 66 cents (Mexican currency) per day, with food and quarters.) Such is now the case at the town of Jaltipán, on the Isthmus of Tehuantepec, which has been an im-

portant labor recruiting centre for many years, and contractors are experiencing great difficulty in fulfilling their undertakings. From Chiapas come reports of a similar nature. Along the line of the Pan-American Railway, where formerly labor was abundant at the straight rate of 50 cents per day, none is now to be had at any price. But, with all this, there has been no quitting on the part of planters; all remain at their posts, doing the best they can until things readjust themselves.

MEXICAN RUBBER EXPORTS.

OFFICIAL Mexican statistics of exports to April 30, show following results (converted into gold):

MONTH OF APRIL—	1910.	1911.
Rubber	\$915,893	\$659,928
Guayule	465,297	575,829
TEN MONTHS TO APRIL 30—		
Rubber	\$6,315,600	\$9,560,787
Guayule	3,763,676	5,216,946

FROM THE TIERRA CALIENTE.

R. L. RICE, an exceedingly energetic sales agent of the Hood Rubber Co., Boston, Massachusetts, is an extensive and enthusiastic traveler. The illustration shows him on a Mexican vacation



R. L. RICE IN MEXICO.

trip, far down in the *Tierra Caliente*. The result of this trip and of others in the tropics, is that he is much better informed upon crude rubber questions than most men in his particular line of industrial endeavor.

A NEW COAGULATING METHOD.

TO THE EDITOR OF THE INDIA RUBBER WORLD: SIR.—Among the various consignments of Mexican plantation rubber which I received during last winter, was one of 2,000 pounds, prepared for market in a manner so radically different from the usual methods in vogue that I think a description of the process may prove interesting to many of your readers.

This consignment was made to me at New York by Finca "Filadelfia," located at Lumija, in the interior of the State of Chiapas, Mexico, and belonging to the Mexican Plantation Company, of Philadelphia, Pa., a property consisting of nearly 4,000 acres of Castilloa rubber, the oldest of which is now nine years of age, under the care and supervision of Mr. H. H. Markley as general manager.

Accompanying the consignment was a letter from Mr. Markley describing his process of preparing the latex for market; the result of his years of study, observation and experiment.

As the latex is brought in by the tappers, it is first strained to remove all foreign matter and it then receives one washing

or "creaming" with a sufficient volume of water. From the washing tanks the latex is then run into a large shallow pan, into



MARKLEY'S COAGULATOR, SHOWING ENGINE, BOILER, MACHINE AND VATS IN THE BACKGROUND.

which is barely immersed the under surface of a copper drum, measuring three feet in width and six feet in diameter.

This drum is heated by steam to between 160 degrees and 175 degrees Fahr., and is revolved slowly, just fast enough to allow the thin film of latex to dry, which its surface has gathered in passing through the latex in the shallow pan during each revolution. The revolution of the drum is constant until its surface has collected and dried a mass of rubber, say one-quarter of an inch thick, when a knife cut is made across the drum and the mass of rubber removed in the form of a sheet eighteen feet long and three feet wide. These sheets which, as removed from the drum, are thoroughly dry and do not contain over 1 per cent. moisture, are immediately rolled up and are ready to ship to market.

The entire process is purely mechanical, as no chemicals of any nature whatever are used.

Moreover, if a smoke-cured rubber is desired, the drum is en-



SHOWING THE INVENTOR TAKING OFF THE SHEET OF RUBBER.

cased or housed and smoke introduced, which acts on the thin film of latex taken up on each revolution of the drum and thus producing a thoroughly smoke-cured sheet.

The product of this drum is sixty pounds of dry rubber per day. Mr. Markley has had three more of these drums made, which are now on the way and will be set up and running by July 1, I understand.

These new drums are made ten feet in diameter, thus producing a strip of rubber thirty feet long by three feet wide and making the entire plant capable of producing 300 pounds of dry rubber daily. As this property has a sufficient number of eight and nine-year-old trees to keep such a plant running, I believe that at last we shall have one Mexican rubber plantation producing regularly a quantity and quality of rubber to command the interest of our large rubber mills.

Regarding the quality of rubber produced by this process I may mention that I divided this consignment into four parcels and sold it to four different mills at a price close to the Up-River Fine Para, one lot being sold on January 16 at only 5 cents per pound less. I received very favorable comments from the trade on this lot of rubber, one buyer saying that this lot of rubber was the closest approach to Amazon Para that he had ever seen, both in appearance and strength of fiber.

Samples of this lot, now on file in my office, after nine months of age, show no deterioration from decomposition of vegetable albumens and resins, which obtain in all Castilloa rubber; in fact, they have hardened and toughened similar to Para grades and quite unlike the native Mexican and Centrals.

I believe Mr. Markley deserves much credit for working out this process on such a practical basis, that the Mexican Plantation Company will derive much benefit by preparing their rubber for market by this process and that other Mexican plantation companies and also the consuming rubber mill will all be able to profit by this process. Respectfully yours,

W. L. WADLEIGH.

Boston, July, 1911.

INTERCONTINENTAL RUBBER CO.

The various plants of the Intercontinental Rubber Co. are again running full capacity, and the shipment of rubber is being resumed as rapidly as possible, a very favorable condition when the strenuous occurrences in connection with the recent uprising are considered. The company paid its regular quarterly dividend of 1 per cent in June, and a dividend of a similar amount has just been declared for August, so that the 4 per cent. basis on which the stock has been kept for some time past is thus maintained.

INDIA-RUBBER GOODS IN COMMERCE.

EXPORTS FROM THE UNITED STATES.

OFFICIAL statement of values of exports of manufactures of india-rubber and gutta-percha for the month of May, 1911, and the first eleven months of five fiscal years, beginning July 1:

MONTHS.	Belting, Packing and Hose.	Boots and Shoes.	All Other Rubber.	TOTAL.
May, 1911.....	\$179,827	\$75,406	\$720,130	\$975,363
July-April	1,742,683	1,894,282	5,198,295	8,835,260
Total, 1910-11....	\$1,922,510	\$1,969,688	\$5,918,425	\$9,810,623
Total, 1909-10....	1,754,082	1,792,691	4,622,560	8,169,333
Total, 1908-09....	1,371,586	1,208,473	3,468,945	6,049,004
Total, 1907-08....	1,225,618	1,486,959	3,443,465	6,156,042
Total, 1906-07....	1,135,116	1,082,003	3,358,459	5,575,578

THE above heading, "All Other Rubber," for the month of May, 1911, and the last eleven months of the fiscal year, includes the following details relating to Tires:

MONTHS.	For Automobiles.	All Other.	TOTAL.
May, 1911.....	\$310,346	\$59,194	\$369,540
July-April	1,528,136	479,213	2,007,349
Total, 1910-1911....	\$1,838,482	\$538,407	\$2,376,889

NON-SMOKING OF PLANTATION RUBBER.

By Joseph T. Wicks.

AT the commencement of a new departure, like the preparation of plantation rubber in Ceylon and the Malay States; it is very important to consider how it should be conducted to suit the requirements of rubber manufacturers of America, England and the Continent.

Now the less the rubber is handled the better will be its quality. Why should buyers be called on to pay something extra for a process of smoking which is useless, and no doubt initiated by men who are not rubber men, and who know not what is required. A buyer may be asked to pay a few cents per pound more for a smoked lot of plantation rubber, the rubber being to this extent poorer in quality. Therefore, we practical experts say to the planters, don't handle the prepared plantation rubber merely for the sake of handling it; be content, let well alone, only see that you get clean and air-dried rubber.

Rubber cultivators should not attempt to imitate the native Indian manufacture on the banks of the Amazon. Here is a case where what is good and suitable for the region of the Amazon, South America, is absolutely worthless and harmful for Ceylon and Malaya. The conditions, as between East and West, are entirely different. We might all start to bind our feet because the Chinese do theirs. Ireland might just as well attempt to imitate British Columbia in canning salmon; or London attempt to rival Chicago in packing beef.

The native Indian manufacture of hard cure fine Pará rubber, the production of hams and balls and biscuits by dipping, pouring and smoking is unique and excites the admiration of practical rubber experts who are accustomed to see through the nature of things.

Between the years 1840 and 1850 the American manufacturers induced the Indians of Brazil to ship to New York unsmoked, or as it was then, and is now, called Virgin rubber. The Indians forwarded some cargoes, but as the Virgin rubber was not properly dried, the whey or watery portion of the rubber milk turned sour and on arrival in New York the rubber was in a stinking condition. At that time the manufacturers of coats, pillows, beds and air-proof cushions could not use highly smelling rubber. This happened just prior to the great discovery in America of vulcanization.

As soon as the Indians found that they were not to be paid for Virgin rubber, they quickly reverted to the smoking process and have adhered with great tenacity to their long tried and approved process of dipping and smoking ever since.

The wonderful skill displayed by the native Indians in their waterproofing of cloaks, the making of shoes, balls, syringes and toy animals, is an object lesson that we rubber experts can appreciate and marvel at the Indian's farsightedness.

What manufacturers and practical mill managers in the United States and England should demand of planters, cultivators and gatherers in the following:

- (1). Plant and cultivate with all speed.
- (2). Cleanliness in collecting Plantation rubber.
- (3). Let the rubber be fresh air-dried.
- (4). Avoid sunlight and exposure to the sun's rays.
- (5). Avoid artificial heat.
- (6). Eliminate the smoking process.
- (7). Eliminate the pressing or blocking process.
- (8). The fewer the processes the greater the strength, therefore, better quality.
- (9). Rid yourself of fads.

[We do not wholly agree with the writer nor does he prove his case. If he has facts and figures to prove that plantation smoked is inferior to air-dried plantation rubber we should be glad of them. The mere assertion of inferiority is not convincing. The Editor.]

A RUBBER PRODUCER FOR THE SUB-TROPICS.

It has been the dream of many to be able to cultivate rubber in the temperate zone and perhaps that will yet be done. At all events cultivation is more and more extending towards the frost line. Tonkins rubber tree, the *Bleekrodea Tonkinensis*, flourishes where the thermometer for miles gets down to about 40 degs. Fahr. It is therefore possible that portions of the rubber tropics, where it is too cool for *Hevea*, may in time make it available.

In a comprehensive article in the *Bulletin Economique* of the Government of Indo-China, Ilanoi. Dr. Ph. Eberhardt and M. Dubard, two official experts have dealt at length with the botanical features of the tree, as well as the questions of cultivation, collection and preparation.

THE LATEX AND ITS PRODUCTS. I. COLLECTION BY THE NATIVES.

The appreciation of its value by the natives was due to pure accident, a chance knife thrust revealing the fact that the tree in question was a latex producer. Instead, however, of the latex being kept apart, it was mixed with that obtained from the *Ficus*, *Autocarpus* and other varieties; the result being a very inferior glutinous product, containing a quantity of resin, which fact depreciated its value upon the European markets. This depreciation being reflected in the reduced limits buyers offered, and the price falling too low to satisfy the natives. They soon abstained from tapping those trees. In this way the exhaustion and destruction of the latter were prevented.

When collecting latex, the native has only one idea; to gather the largest quantity possible. Hence he usually employs barbaric methods, which, if they do not cause the death of the tree, result in a long period of non-production, to enable it to repair its injuries. They collect latex from the base of the trunk, up to a height of 8 to 10 feet and also on the large branches. As many incisions as possible are made on the principle that the more incisions the greater the yield. Such, however, is not the case, the yield being less. The lactiferous vessels, being hacked in every direction, no longer permit the normal flow of the liquid; the circulation being impeded and the latex containing a very large quantity of organic substances.

PREPARATION OF THE RUBBER.

In whatever way the tapping has been affected, the native receives the latex in small receptacles of interlaced bamboo. This mode of collection leads to the introduction of foreign substances. These bamboo receptacles are then conveyed to the adjacent village, or to a water-course, where they are placed in a saucepan of water until it boils, being then removed in coagulated form. The latex of *Bleekrodea* coagulates very quickly, that process being facilitated by the motion to which it is subjected in transport.

PERIOD OF COLLECTION.

The latex can be collected twice a year, in the spring and

autumn, but the natives are disposed to limit their efforts to the second period, between the end of August and the end of November. At this time the yield is considered to be more abundant. The *Bleekrodea* is extremely sensitive to the variation of the seasons; while its yield varies according to the latitude in which it is being developed.

CLIMATIC INFLUENCES.

The most suitable time for tapping the *Bleekrodea Tonkinensis* has not yet been definitely determined. The yield seems closely related to the atmospheric conditions. In the Bac-Kan region, where the autumn and winter seasons are cold, tapping in November and December resulted in a very limited flow, while that operation in May and June gave in two hours equal to about 12 ounces per tree, from trees of moderate age, 10 inches in diameter. December tappings in the basin of the Black River, considerably further south, were, however, as copious as those of the Bac-Kan region in May and June. The influence of temperature on the yield of latex to be accurately determined, would require observations running over an entire year, at the different altitudes and latitudes where the tree is met with. Another point calling for investigation is the time of day most suitable for tapping.

LATEX FROM A CHEMICAL STAND-POINT.

Bleekrodea latex is a slightly thick liquid, of the shade of coffee with milk, recalling the latex of the *Ficus elastica* (except as regards its color) and like the latter coagulating very rapidly and without the aid of chemicals. The product of its natural coagulation, is of grey-

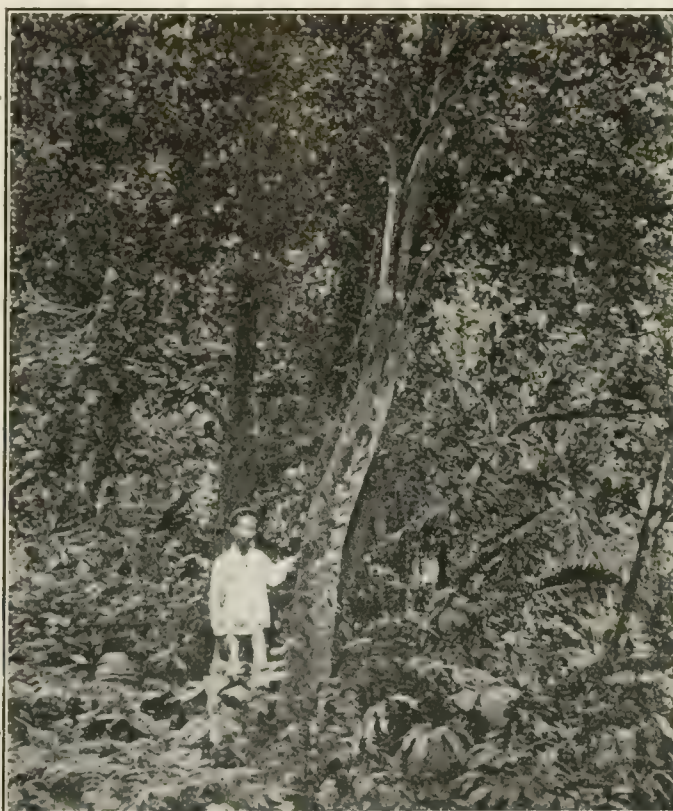
ish brown color; the white portion very rapidly taking a brownish tint when exposed to the air. Chemical investigation reports its elasticity to be very good, while its nerve and adhesiveness are stated to be perfect.

The composition of rubber from the *Bleekrodea Tonkinensis* is as follows:

Density	0.955
Water	28.32
Ashes	0.62
Actual rubber	60.76
Resins	3.67
Foreign substances, difference	6.63

It is remarked that the quantity of actual rubber may appear small, but this is due to the large proportion of water (28.32%). This percentage of water is attributed to the recent manufacture of the slab submitted for analysis, it having been made only three days previously.

After dealing with various suggested improvements in tapping and other operations, the question of the chemicals to be used is taken up. On this subject it is stated that of various acids, sulphuric acid has always given the best results. Acetic acid seems to produce a dissociation of the surface of the globules,



GENERAL VIEW OF A BLEEKRODEA CUT BY THE NATIVES.

which prevents their cohesion. Hydrochloric acid likewise seems ill adapted to *Bleekroeda* latex, the product, under its action, being less elastic than would normally be the case.

COMMERCIAL VALUE.

Two samples sent by the author of the paper were valued by Mapes Hecht Fières. One had been treated by ether and freed from all foreign substances, being valued at 72 to 75 cents per pound. The other, a crude sample, gathered without care by the natives and containing a large quantity of impurities (coagulated without using any acid) was valued, notwithstanding its impurities, at about 49½ cents per pound. These prices were quoted at a time of depression when Pará was worth less than \$1 per pound.

On the basis of the price current for Pará fine when the article was written, about \$2.25 per pound, it is considered that if any *Bleekroeda* rubber was on the market (well treated and well prepared) it would sell at from about \$1.62 to \$1.80 per pound, a difference of about 28 per cent. While these comparative valuations are thus more or less approximate they are none the less interesting.

NEW TRADE PUBLICATIONS.

JOHN ROYLE & SONS (Paterson, N. J.) publish a series of booklets illustrating and describing their "Perfect" Tubing Machines, made in a series of three sizes, suited for different classes of work. Accompanying them is a partial list of users of these machines, which includes the leading rubber goods manufacturers. The artistically executed illustrations plainly show the construction and general appearance of the machines, which the text describes in detail.

WESTINGHOUSE ELECTRIC AND MANUFACTURING CO. (East Pittsburgh, Pa.) describe in detail, in an attractively illustrated pamphlet, their Engine Driven Direct-Current Interpole Generators—Type Q, made in 25 to 1,000 Kw. and 125 to 600 volt sizes, for power purposes. The illustrations, with the accompanying text, are admirably planned to give even the non-expert reader an idea of their constructional and technical advantages.

B. F. STURTEVANT CO. (Hyde Park, Mass.) publish as an addition to their engineering series, Bulletin 188, devoted to generating sets with vertical engines, especially adapted for installation on board ship and for isolated electric power plants. The well-executed illustrations and accompanying text, plainly set forth the advantages claimed for this apparatus, tables with suitable diagrams giving detailed particulars as to their component parts.

THE UNITED STATES TIRE CO., (New York) in distributing its latest publication, "How to Keep Down Tire Expenses," among automobile owners, has not only accomplished a judicious and very timely feat in advertising, but has given practical evidence of its intention to make its recently established "tire service department" of practical value to the owners of automobiles. The publication in question, which is liberally and effectively illustrated and typographically attractive, contains a great deal of information that the motorist formerly acquired for hard cash, or at the cost of expensive experience and which is set forth in plain terms. It is designed to eliminate the most frequent sources of tire trouble and the intelligent application of the information it contains will go far towards accomplishing that result and increasing tire mileage.

Recording gauges for a variety of purposes of recognized accuracy are the subject of bulletin No. 142 published by The Bristol Company, Waterbury, Connecticut. Thousands of these gauges are in use for recording pressure, vacuum, water level, moisture, etc. Their recording water-level gauge, for tanks, reservoirs, sewers, canals, etc., are notably useful for recording the level of water where the recording instruments are at higher level than the surface of the water under observation. The bulletin, in its 24 pages, illustrates and describes the various forms in which these gauges are supplied.

REAL SYNTHETIC RUBBER.

SAYS a London daily regarding the production of synthetic rubber from Isoprene at the International Rubber Exhibition:

"So far as we are concerned, the experiment is interesting, but must be inconclusive. We have never denied to the inventor his ability to produce a substance which has the appearance and some of the attributes of natural rubber, and that we are ready enough to concede to other experimenters who take isoprene (however obtained) as the basis for an artificial product. What we wish to emphasize, however, is the improbability of such an invention becoming a commercial success; that is to say, we do not believe that any synthetic rubber process yet invented can be worked on strict commercial lines that will admit of profits being earned for those who back such processes with their capital. The total annual output of such a commodity claimed by every inventor of a synthetic rubber process with whom we have come in contact invariably shrinks from first airy estimates of hundreds or of thousands of tons to a couple of hundred tons each year at most, and inventors then fall back upon their second line of defence, so to say, and hint, more or less mysteriously, at profits to be earned from other products of their isoprene base, which alone are calculated to make the working of their rubber processes amply remunerative. As the markets for such of these products as have been named to us are essentially limited ones, it calls for no great acumen to discover the fact that to produce them on even a moderately large scale would mean an immediate fall in the selling prices. Therefore, as putative sources of revenue, they are unreliable, and to talk of these increased supplies creating increased uses for them is a weakening rather than a strengthening of the case of the inventor of any 'synthetic' rubber process. No doubt such new outlets in time might be created, but while these were being found the mere fact that supplies of these commodities were much in excess of existing requirements would be bound to keep the selling prices down to unremunerative levels."

ILLUMINATING PARAGRAPHS CONCERNING RUBBER.

"HOME Grown Rubber May Smash Trust"! says the *Boston Post* in big letters half across the page. Just how or when is not explained, nor do the editors care. They know it is the sort of spicy *pabulum* that the public will gorge and feed it out regardless of facts.

* * *

Harper's Weekly informs its readers that black ants in South America gather the coarse Pará from *Hevea* trees and "carry it away." (Doubtless with the idea of cornering it.)

The same trustworthy paper also declares that South American bees tap trees to get gums for their "nests."

(This is not as strange as the habit of the Peruvian frog. The frog, of course, must be a good jumper to secure food and to escape its enemies. As they grow old the resiliency of the leg muscle decreases. They, therefore, with a piece of saw grass, tap a caucho tree, coagulate the milk with their saliva which is very alkaline, and form little pneumatic cushions for their hind feet. These they attach with partly coagulated rubber. They are then able to jump as far as ever. Curiously enough they will not allow any of the young frogs to make or use these rubber soles. Whether this ruling out of the more vigorous ones comes from fear that they may jump so far that they cannot get back, or from simple jealousy, scientists have not determined.)

* * *

The *Chicago Journal* has discovered a "New variety of rubber" in Borneo. It is "jelutong" and comes from the *Dyera Costulata*. (Actually it has been on the market for more years than has the journal that has just discovered it.)

The Editor's Book Table.

RUBBER, by Philip Schidrowitz, Ph.D., F.C.S. Methuen & Co., Ltd., London. (Cloth, 8vo., 290 pp. with 83 illustrations and diagrams. Price, 10s. 6d. net.)

FEW men are better equipped than Dr. Schidrowitz to write on the topic that he has chosen. He is chemist, botanist, physicist and tropical expert. He is in touch with rubber in the field, having studied the plantations in the Middle East and dipped into the jungles of Java and Borneo. He is familiar with German, English, French and American mill practice, not from hearsay but from personal observation. Further than this he writes clearly and voluminously.

In this volume he presents, in a practical, critical and interesting manner, the story of rubber, from the origin of its name and the source of its supply, to its latest industrial application to practical purposes. While the chapters devoted to the production of rubber are exceedingly comprehensive and enriched with numerous original illustrations, the portion devoted to the manufacture of rubber is exceptionally complete, the illustrations including the principal up-to-date machines employed in the various manufacturing departments. The chemical and physical and mechanical properties of rubber have also received detailed attention, as was to be expected from the author's experience as a past member of the Council of the Society of Public Analysts, a past member of the Committee of the Society of Chemical Industry, and a member of the International Rubber Testing Committee. Subjects involving comparatively recent development or novel principle, have been treated at length and with notable care, and the illustrations, which are numerous and selected with excellent discrimination, complete a work which is typographically excellent and a valuable contribution to the literature of india rubber, its production and manufacture.

THE AFRICAN RUBBER INDUSTRY AND FUNTUMIA ELASTICA (Kickxia). By Cuthbert Christy, M.B., C.M. (Edin.) London, John Bale, Sons & Danielson, Limited. [Cloth, 8vo., 252 pp. Price, 12s. 6d. net.]

In this interesting work, Mr. Christy has dealt with the comprehensive subject of the "African Rubber Industry" under its various aspects, with special reference to *Funtumia Elastica* (or *Kickxia*). The two opening chapters treat of the geographical, commercial and statistical phases of the question affecting the various countries of tropical Africa, while the following one deals with the botany, life-history and structure of the genus *Funtumia*, so intimately allied with African rubber culture.

The next stage is the consideration in the fourth and fifth chapters of the distribution of *Funtumia* and of the climate and soils where it thrives. Cultivation, growth, forest and plantation yields, tapping and coagulation are successively treated in Chapters VI to XVI, while Chapter XVII describes the physical and chemical properties of the rubber. In conclusion, Chapter XVIII records the efforts made to introduce *Funtumia Elastica* in the West Indies, British Guiana and the Pacific islands. That success in this direction has been very limited is mainly attributed by Mr. Christy to lack of knowledge of the special planting requirements, the plants being set at wide distances apart in the open without side shade, as if they were *Hevea*.

Mr. Christy's work is thus of an educational character, with the object of diffusing information as to the conditions which lead him to the conclusion that the indigenous tree is the most suitable for general plantation purposes in tropical Africa. Reference is made to the fact being recognized in the Congo that the future of the country as a rubber producing region probably depends mainly upon the cultivation of tree-rubbers; the point now at issue being whether *Funtumia* or *Hevea* is better suited to local conditions.

While estimating on the basis of published statistics the share of Africa in the world's rubber production as 30 per cent. against 60 per cent. for South America and 10 per cent. for Asia, Mr. Christy emphasizes the fact that the average loss of 50 per cent. in washing African rubber, against a maximum loss of 15 per cent. on the South American product, makes an essential difference in the actual result, when applied to clean rubber.

As to future prospects, the opinion is expressed that very shortly there will be scarcely any African wild rubber trees to meet the ever-increasing demand, with the result that there is no hope of recovery for the rubber industry of the West African colonies, unless extensive planting be encouraged to replace the destroyed rubber trees and vines.

Mr. Christy's work, starting from the Western coast, takes the reader through the rubber producing countries of tropical Africa—Gold Coast, Sierra Leone, Southern Nigeria, Liberia, French Ivory Coast, Togoland, Belgian Congo, Kameruns, Portuguese Angola and Uganda. Each of these has its story told in detail and illustrated by graphic statistical tables.

The author is to be congratulated on having gathered so many valuable facts and on having so efficiently grouped them. Over 100 illustrations and ten full page plates embellish the work and contribute to its practical value.

THE PHYSIOLOGY AND DISEASES OF *HEVEA BRASILIENSIS*, The Premier Plantation Rubber Tree. T. Petch, B.Sc., B.A., Mycologist to the Government of Ceylon. London: Dulau & Co., Limited. [Cloth, 8vo, 264 pp. with index and 18 plates. 7s. 6d. net.]

In this comprehensive and careful work, the author has embodied the results of experience acquired during six years spent in the investigation of *Hevea* diseases in Ceylon, and in examination into examples of *Hevea* diseases from India, Burmah, Malaya, West Africa, the West Indies and South America. It describes for the first time, several new diseases, while the detailed account given of the normal structure of the tree is so plain and so complete that it should enable the planter to discriminate immediately and infallibly between abnormal non-pathological appearances and indications of disease.

The various methods of treating and combating diseases likely to occur among rubber trees, are very clearly and fully described and special chapters are devoted to the effects of various tapping systems on the normal functions of the tree, and to a detailed account of the processes that go on when latex is extracted.

Handsomely printed, appropriately illustrated and filling a long existent vacancy in the literature of the practical side of rubber planting, the work will undoubtedly find many interested readers who will profit by the mastery of its contents.

RUBBER SHARE HANDBOOK. DETAILS OF COMPANIES OWNING rubber and other produce properties in Ceylon, the Malay Peninsula, British North Borneo, Sumatra, Java, Africa and South America. [Eighth Edition.] London: *The Financier and Bullionist*, Limited, 1911. [Cloth—boards, 8vo. Pp. IV + 636. Price, 2s. 6d. net.]

Embodying all the features that have won for this work pre-eminence as a reference book for the use of those interested in rubber planting and kindred investments, the current edition supplies, in convenient form, complete information in regard to the companies listed, their capital, officers and directors, properties, production, prospects, operating expenses, etc. A special alphabetical list of directors is appended. The book is well printed and practically arranged to facilitate ready reference and will take its place with its predecessors as an authentic record of an interest, the growth of which in financial and industrial importance is reflected in its orderly and closely printed pages.

Piece Work and Bonus Payment In Rubber Mills.

By a Practical Man.

IN paying for labor in rubber factory work, several methods are employed, among them being ordinary graded wages by the hour, piece-work, bonus or premium additions to regular wages, and some arrangement whereby a portion of the earnings of the factory are distributed among its employees. We will discuss in this article the relative values of piece-work payment and bonus payment.

Wages, at first glance, would seem to be the money earned by a workman. This is, however, not literally true. There is a minimum wage which must be paid a man for a day's work without specific reference to its quantity or quality. From this minimum the wage rate rises, governed by a number of conditions not always under control of the factory. The minimum is found, naturally, where the labor supply is abundant, and also unskilled, for it is true that men in the skilled trades or occupations, are, under normal conditions in this country, rarely long out of work. But many factories are more or less isolated from centers where labor can be readily obtained, hence the problem is, perhaps, more vital, and the superintendent, to protect himself, must make use of a quality of men, and pay a higher wage than would be necessary under different conditions. The average factory pays what it has to; for common labor, \$1.50 to \$2.00 per day. One that has the reputation for paying lowest wages, invariably finds the "floaters," the shiftless, and the unskilled besieging the employee's entrance.

The development from unskilled material, of the accomplished artisan, is therefore, a matter calling for patient, persevering training throughout considerable periods of time, during which the factory, in addition to the \$1.50 to \$2.00 per day in wages, has had to pay a more or less exacting toll in the way of broken machinery, and imperfect goods, with an occasional finger or arm, or other serious injury thrown in by way of variety.

The finished producer, skilled workman, machine operative, etc., having been evolved by training, what wages will he command, and what, per contra, in the way of production should you expect from him? Of two things one can be very sure: He knows what wages he wants, and just the amount of effort he will put into his work to get it. He has acquired skill under his employer's teaching, but he has also secured a fine and discriminating judgment of what constitutes a day's work.

Such a workman is not a bad fellow. He has been employed five, fifteen, twenty-five years, and will put his shoulder to the wheel to help get out a rush order on time. One can rely upon the quality of his work, on his dependability—but he don't go home at night exhausted by his exertions, for the very particular reason that, barring an occasional spurt for "auld acquaintance sake," there has been no extra money in it for him. He travels along in the rut worn by common factory practice, and will not depart from the pace workmen have set for themselves.

This being a basic fact, it is interesting to notice that some rubber factories still cling to wage payment by the hour. It is also true that where this is the rule, nothing like the real productive capacity of a workman can be secured.

A factory conducted along the easy lines of pay by the hour, successful in the past, established in the quality of its goods, is loath to depart from time-honored methods at the behest of competition. But instances are numerous where they have been obliged to do this in order to maintain their position, their prestige, their very existence. It is self-deluding to contend that quality, must of necessity, be sacrificed to quantity. The

"other fellow" is turning out the goods and underselling the conservative, pay-by-the-hour factory. Then, at last, the emergency must be faced. It is of too vital importance to be longer ignored, and haste is made to compare the advantages of piece-work and of bonus incentives in payment for factory work.

Let us consider the results that would accrue from the adoption of "piece-work."

Factory history has well written into it the perils that lay along the piece-work payment path. The general subject has been so widely discussed among employees, that, whether they have had personal experience with it or not, the average workman views it with suspicion. He has, perhaps, come to regard it as that new thing by which the boss proposes to get a larger percentage of work out of him, or his machine, than he is willing to pay for in proportion. Perhaps he looks back to the time when it was tried on him, and he, in the simplicity of his enthusiasm for better wages, "*worked*," to find, after a trial of a few weeks or months, that the new rate was cut down, but the demand of the factory for greater production insisted upon. After such an experience it is difficult to get a workman to control his dislike for any innovations in the method of earning his wages.

It need hardly be said, however, that such blunders (for such unpreparedness is blundering), on the part of the factory management can be easily avoided. To do so, careful studies must be made. First, of each piece of machinery, to ascertain its production in pounds or feet per hour, as then operated, these figures to be properly tabulated. Such a study would probably disclose that the machine was not turning out 75 per cent. of its normal capacity, perhaps not 50 per cent of it, owing to any one of the following causes: If a mixing mill: because the maximum weight of a batch a workman could handle in a given time was not furnished by the compounder; or because he lost time in the beginning of each session, waiting for his mill to "warm up"; or waiting for material. If a spewing machine: because workmen had to wait for stock from the calender, or mill, or had to return it because, when it did arrive, it was unfit for use. If a calender: it is too hot or too cold, or it is waiting for material from the mixing room, or cloth from the dryer. *These retardments to, not maximum, but merely normal productiveness of machines, are all subject to correction at the hands of the men in charge of departmental work, and it would be folly to rush into piece-work or any new method of wage payment before correcting evils in administration.* For it must be borne in mind that these evils have little to do with the individual capacity of a workman, but with the lack of effective management under which he labors. If a piece or pound work rate was made without first correcting such conditions, did they exist, the workman working to a common end, would secure extra pay for doing what, had all the departments of the mill been properly managed, he would have done as a part of the regular work and production of the day, and without extra exertion on his part.

It is also true that the introduction of any plan whereby workmen may increase their wages, is, to a degree, corrective of the evils to which reference has been made. For the man who is working to increase his wages, and is dependent in part on material to be supplied by another man or department, makes his wants known in no uncertain way, and demands proper service all along the line. But what a workman can secure, a foreman or superintendent should have foreseen and provided for.

Incentive, therefore, to greater production per workman, should find its satisfactory development and illustration in the individual. A productive workman should have to wait for no material or convenience that can in reason be supplied. With everything to hand and in constant supply, it is possible for him to make every movement count, and demonstrate the beauty, desirability, and wonderful effectiveness of the piece-work method.

If factory conditions have been corrected where study revealed the necessity, and after close analysis of men and methods, equitable piece-work rates established, there is no reason why relations between employer and employed should not continue indefinitely on a basis of mutual confidence and mutual advantage.

Every manufacturer is, of course, aware of at least one weak spot in piece-work method of paying for labor, so far as his end of the proposition is concerned. Whether the factory output is five thousand articles of a given sort per day, or five times as many, he pays for his labor the same rate for each. It would seem as though a manufacturer should be able to profit in proportion to the capacity of his factory. To reach its maximum, he has, possibly, been able to give employment to twice as many workmen as in previous seasons. Logically, this piece-work system, to be equitable, should show a greater gain to the manufacturer from the production of twenty thousand articles per day than from ten thousand. Let us examine the "bonus" method of paying for labor, and see if it offers a solution for this difficulty:

Working with a bonus arrangement, the factory employee finds his regular rate per hour secured to him, plus whatever he can produce over and above a certain quantity of output from his hands that has been agreed upon as constituting a normal day's labor. For example: He is a tire builder, rated at \$3.00 per day, and for this wage it is understood that he will produce ten tires. This number he can make working faithfully and intelligently. If, however, by putting a little more brains into the work; by improving his method of handling tools or materials, he can produce fifteen tires, he secures an addition to his regular wages of \$3.00, a bonus of, let us say, 15 cents per tire, making a wage for the day of \$3.75. The gain for the factory is seen in the reduced labor cost: the fifteen tires costing 25 cents each instead of 30 cents each for ten.

It is, of course, true that a flat rate of 25 cents per tire could possibly have been secured in a straight piece-work proposition, or any other rate that a factory was able to establish. It is apparent, however, that to carry on successfully the piece-work method of payment, a factory requires to be thoroughly well organized. Under this system a workman is presupposed to make proper wages, and the factory is obligated to supply the means. If the supply is continuous, and the resulting finished goods satisfactory, all is well. But delays in process, owing to shortages in material, or breakages, curtail the daily earnings which a piece-worker may make, with consequent and consistent dissatisfaction.

As a rule, in making a piece-work rate, care is used to make it so low that only by extra and continuous exertion can a workman make a satisfactory wage. This, as a rule, is not an insurance for quality. Then, too, capacity varies with the workman, and the rate that pays one man properly, pays another inadequately. These conditions do not arise under the bonus system.

We are prone to lose sight of the fact that a workman's time has a value in itself for him. This the factory may purchase at an established rate, and assume the responsibility of getting value received. This acknowledgment of a man's value has an ethical side not found in piece-work propositions. Giving a workman a wage rating, makes him a component part of the factory, to which, as the years of his employment continue,

he becomes attached. The piece-worker, on the other hand, has no interest in the factory outside of the particular work in which he is engaged.

We have, however, in the first of this article, intimated that wages was the money a workman *earned*. Singularly enough, opinions might differ as to what sum constituted a man's earnings for a day's work of a specific kind. Standards differ. Labor has not been standardized. The production of a workman for a day's wages in one mill, would not meet the exacting requirements in another. It is, therefore, more complex than appears on the surface. The effort that, a decade ago, would have been accepted as constituting a day's labor, will not answer in these high-pressure times. The modern superintendent is not an "easy boss."

Mr. Frederick W. Taylor, in his book on "Scientific Management," lays special emphasis on the necessity for standardizing men. Men are picked for certain work, trained to become experts, and then, it is needless to add, driven to secure the highest possible production.

Such a trained man would be paid on the basis of his productive capacity, either by straight "piece work," or some plan whereby his scheduled rate per hour would be increased by a "bonus."

Of these two methods, "piece-work," or "bonus" payments for labor, which should be adopted, is therefore, largely a matter of choice. The size of the factory, nature of business, location, quality and quantity of workmen, should all be considered. For a small factory employing under 500 men, doubtless some form of bonus would be found to work satisfactorily, for in many situations it is necessary that a factory force should be mobile; with men trained to the work of different departments.

In the larger factories, however, where there is much specialization, and it is possible to employ large numbers of men at one sort of work, "piece-work" payment will achieve most valuable results. In such a factory there is little shifting of workmen from one department to another. Each man becomes an expert, and the larger numbers engaged in each line of production, permit of inspection, and records of individual work being reduced to a matter of acumen and mathematics.

UNITED STATES RE-EXPORTS OF CRUDE RUBBER.

AMONG the features of recent United States rubber statistics is a fact not generally known, that this country is acquiring growing importance, not only as an importer of rubber, but also as a re-exporter of that article. This statement is illustrated by the following table showing the results of the last four fiscal years:

UNITED STATES. RE-EXPORTS OF CRUDE INDIA RUBBER.

	Pounds.	Value.
1908	4,110,667	\$2,994,208
1909	3,791,971	2,964,496
1910	6,492,947	7,629,380
1911	(Estimated) 6,200,000	6,000,000

The distribution of the re-exports for the first three years was as follows:

	Canada.		United Kingdom.		Other Countries.	
	Pounds.	Value.	Pounds.	Value.	Pounds.	Value.
1908 ...	2,755,662	\$2,061,497	691,044	\$500,023	663,961	\$432,688
1909 ...	2,638,685	2,076,299	586,193	468,405	567,093	418,792
1910 ...	3,382,153	3,376,506	2,169,370	3,291,394	941,424	961,480

Mrs. Miner plans to make her home in Granby and carry on the charitable benevolent work in that community that she and her late husband were so much interested in.

INSIDE HISTORY OF ONE SYNTHETIC RUBBER SCHEME.

AN investor in one of the long-drawn-out synthetic rubber schemes that drew into it a distinguished chemist and that got at the pockets of some very astute business men, is at length willing to talk freely. The whole business was handled with exceeding secrecy, and up to the present no one has talked. The beginning was when the inventor called upon a prominent New Jersey business man and exhibited a substance of a whitish appearance with a very disagreeable odor which rebounded when dropped to the ground. He claimed it to be synthetic rubber, the real thing, and added that it could be manufactured in large quantities and at a very low cost. The business man did not act quickly enough to suit the inventor, so, through certain promoters, a prominent automobile manufacturer in Ohio was interested in the proposition. Definite agreements having been reached, a temporary organization was formed and one of the best-known chemists, then professor of chemistry at a great institution, was engaged to ascertain if the product was genuine and if it could be manufactured commercially. In the interim various lots, which the inventor claimed to have manufactured, were made into rubber bands, hot water bottles, hard rubber goods, etc., and from tests were apparently as good as Pará. The late Durand Woodman made a test and reported as follows:

"I have examined the sample of rubber which you handed me and which is alleged to be synthetic. I have made numerous tests and comparisons and find that while there are some marked differences between the sample and ordinary grades of good Pará rubber, these differences correspond with other well-known grades of rubber. These points are noted in the following summary of tests:

	No. 10,524. Synthetic.	No. 10,545. Pará.
Soluble in acetone	6.60 per cent.	2.70 per cent.
" " alcoholic potash 1.15 "	"	traces.
" " nitrobenzol ...24.35 "	"	0.00 per cent.
Moisture	0.45 "	0.20 to 0.50
Ash (mineral matter).....	0.35 "	0.30 " 0.45

"It is here shown that the amount lost under the action of acetone is more than for good grades of Pará, but it is not more than for the best Madagascar and other grades of best African rubbers. The loss by the nitrobenzol test is large and corresponds to a grade of rubber, or to the admixture of organic substance not rubber of a resinous, waxy or pitchy nature. I have found this to occur in the so-called bastard rubber from Mexico and other localities.

"I do not find any reason for considering the rubber as a synthetic product. The alleged process should certainly be made to stand the test of having all the materials used censored by some one competent and known to the parties interested. The absence among the ingredients, of any rubber material from the rubber tree should be fully proved to the satisfaction of the most exacting."

The inventor, in explaining his invention, stated that while a resident of Georgetown, B. G., he had studied the rubber tree indigenous to those parts, and had carefully analyzed the latex and had endeavored to reproduce, not rubber, but the latex, combining in the latex those elements supplied by nature. For years he had labored without success until just as he was about to give up in despair, success came to him by accident.

The chemist was quite skeptical at first and did not take an active part in the experiments, merely overseeing in a general way, the inventor doing the work, but finally when, in the last stage, small particles of a putty-like substance began to float on the top of the mixture, and when this substance was dried and ap-

peared in truth to be synthetic rubber, he became greatly interested in the work.

At this point the inventor showed his business training and refused to give the complete formula to the chemist. However, a larger stock holding and a slight change in the management soothed his feelings, and he finally gave the formula verbally.

In accordance with the plan of organization a written and detailed formula, made out by the inventor, had been deposited with a New York City trust company, which could only be lifted upon payment to the inventor of a large sum of money and delivery to him of certain stock of the company. To earn this the inventor had to manufacture two thousand pounds at one run at a cost not exceeding twenty-five cents per pound.

The chemist now undertook the experimental work in earnest, and finally announced to the writer, who had succeeded the business man as fiscal agent representing the organizers, that the process was genuine, and exhibited samples which he designated as synthetic rubber and which he stated he had manufactured by the inventor's formula without the aid or admixture of any real rubber. He stated that the material could be made in quantities at a cost of about fifteen cents per pound, and added that the ingredients could be secured to any amount in the open market. At a meeting of the stockholders, shortly after, the chemist made a similar verbal report. On the strength of this report, manufacturing and selling corporations were organized and \$20,000 set aside for expenses. The inventor moved west, where, with the facilities offered in the form of expert engineers, chemists, etc., it was thought that under the direction of the manufacturer, who had been elected president, the manufacturing problem would soon be worked out. But, alas, for human plans! Months and months passed away and about all the inventor did was to make excuses and design machinery which refused to work. Just when the president would grow discouraged, the inventor would restore hope by making by hand a batch of ten pounds or so of nice clean rubber and then get busy on another machine.

In the meantime, the writer conceived the idea that perhaps the inventor had fooled the chemist, so persuaded the latter to make some more rubber. He stated he used the formula as he recollected it and as he collected it from his notes (for the formula he used when he made the rubber he had written out and put in escrow for safekeeping and it could only be taken out in the presence of the president), but the result was not rubber but a brittle nondescript. Again he tried, but with the same result, and he reluctantly concluded that he had been fooled, that the inventor had put real rubber in the mixture during the early stages and then recovered it by coagulation at the end; or that his own formula was defective, or that he had forgotten some of the details of manipulation. So with many sighs of regret, the eminent chemist gave it up.

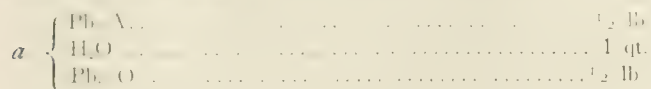
The \$20,000 disappeared for lawyers' fees, traveling expenses, in building special model machines, weekly salary to the inventor, etc., and he, having extracted all he could, journeyed back to New York, there to rail at the injustice and heartlessness of corporations, and perhaps to lure other good American dollars into his pocket by the glittering promise of synthetic rubber.

This is not quite the end, for, to the writer's surprise, the inventor recently called upon him and told a long tale of woe which, boiled down, was to the effect that the formula was all-right; that he could make rubber and wanted to, only the western people had spies about and he didn't dare go ahead and complete his contract for fear they would steal his secret. So it was arranged that a certain well-known rubber corporation should take up the work, and if the formula was found genuine and valuable, they would buy the other interests out, etc.

The inventor agreed to give the corporation's chemist a demonstration. He was to manufacture the stuff in two batches up to a certain point. Each batch could be tested for rubber and

none would be found. Then the two batches were to be combined and 90 per cent. of water added and the rubber would form, slowly but certainly, as the small particles coagulated and floated to the surface. This looked good, but the eccentricity of genius again asserted itself, and the inventor failed to produce the mixture or even to keep the engagement. He pleaded illness and a new date was arranged. This time he pleaded lack of opportunity as he had been busy working on a new refrigeration process. So the great corporation just gave it up.

The inventor's formula in escrow in New York is apparently tied up, but the chemist's formula was lifted and followed out and the result had about as much elasticity as a piece of machine-made pie crust. Perhaps some of the chemical readers of the INDIA RUBBER WORLD would like to try it. Here it is:



One pound of PbO in 1 gallon of linseed oil, shake thoroughly, then mix in lead solution (a), shake well and settle. After settling, filter or decant and work well with very dilute H_2SO_4 —enough to precipitate all lead in solution. Mix 500 cc. of a dilute solution of H_2SO_4 ($\frac{1}{3}$) to the filtrate of $2\frac{1}{2}$ gallons of the treated oils. Settle over night and filter. One qt. H NO sp. grav. 1.25, $\frac{1}{8}$ qt. H_2SO_4 strong. Mix and cool, then add this amount to $\frac{1}{2}$ gallon of the above filtered oils. Stir slowly in a large open porcelain-lined iron evaporating dish. Stir now and again. Take 1 qt. above mixture, add 6 ozs. H NO₃ plus 1 oz. H_2SO_4 and heat to 140 degs. Fahr., with constant stirring, when action commences and frothing, stir until boiling ceases. Add 3 gallons of water when cold. Allow to stand 12 hours. Pour off water and repeat for four days.

For one pound of above product dissolve in CS_2 .

One quarter pound glue in H_2O , hot; 2 drams. $\text{K}_2\text{Cr}_2\text{O}_7$ in 8 ozs. H_2O , mix with turpentine, make a solution; add $\frac{1}{4}$ lb. Na_2CO_3 ; expose to light several days, and then mix with the CS_2 solution and treat to form the required product.

The formula devoid of chemical terms is thus given by one of the Western officials:

FIRST ACT.

REMOVE GLYCERINE FROM OIL.

(a) Take one gallon of well-settled Linseed Oil, to which add 3 oz. of Litharge; mix well with stick or blow with air.

(b) Take one quart of rain water, heat to near the boiling point, and just before it boils add, a little at a time, 14 ozs. of Acetate of Lead. When the Acetate of Lead is all dissolved add 2 ozs. of Litharge.

When solution (b) has become cool, add it to solution (a) and stir the two well together. Blowing it with air is the best method of mixing. The combined mixture of (a) and (b) make solution (c).

Solution (c) must be allowed to settle, the clear oil coming to the top.

SECOND ACT.

Take one part of sulphuric acid and nine parts of water; mix well. This makes the "acid solution."

The clear oil resulting from the settling of solution (c) is termed "treated oil."

To three parts of "treated oil" add one part of the "acid solution." Stir well and allow to settle. This solution will settle in two or three days, and the clear oil which appears on top is termed "acid treated oil."

THIRD ACT.

Six gallons of oil which has gone through the first and second act (being what is termed "treated oil" and also "acid treated oil") is put in a large wooden tank which would hold about 80 gallons. To this oil is added three gallons of nitric acid and the mixture stirred violently with a stick, or blown with air from the power air pump. Stirred for 10 minutes.

After this solution is well stirred, there is added to it one pint of sulphuric acid, teacupful at a time.

When there has been a pint of the sulphuric acid added, the entire mixture begins to boil *very actively*. The "chemical change" takes place so violently that the 300-gallon tank is entirely filled with the mixture as it boils. The product obtained from this "boiling" or "chemical change" is a "red sticky tar."

This "red tar" which, when cold, has decreased in bulk to about the original amount (or 7 gals.).

FOURTH ACT.

This "red tar" is put in a large wooden tank, which will hold about 100 gals., and washed with flowing water. The water must continue until the acid is entirely washed out, which takes two or three days.

The *washed* "red tar" is then put into a ten-gallon crock. To this is added three quarts of "Bi-sulphate of Carbon" and about one gallon of water. The entire mass is allowed to rest several days, and each day stirred three or four times, the tar being slowly *cut* by the Bi-sulphate.

This *cut washed* "red tar" to remain in jar ten or twelve days.

GLUE SOLUTION.

Take 5 pounds of best-grade glue and soak in 16 quarts of rain water, allowing it to remain until the water has taken up all of the glue.

To this dissolved glue 16 quarts of rain water is added and *boiled* ten minutes. When this solution is boiling there is added between one pint and one quart of turpentine and allowed to boil five minutes longer.

This entire solution is then put aside to cool.

This glue solution, when cool, is put in a 20-gallon crock and filled up with rain water. This 20 gallons of solution is then put in a dry, warm place and there to remain until fermentation takes place.

FIFTH ACT.

When the "Glue Solution" is well fermented, which takes about one week, the entire 20 gallons is put into an 800-gallon wooden tank, in which there is about 300 gallons of rain water.

The "Cut Washed Red Tar" is put into the large wooden tank simultaneously with the 20 gallons of "glue solution."

This entire solution of something over 300 gallons is stirred up well and allowed to remain ten days, and each day is stirred several times. During the ninth and tenth days there is added, in all, about two (2) quarts of Bi-Sulphate of Carbon.

At the close of the tenth or eleventh day there is added about 500 gallons of rain water.

Three or four days after the 500 gallons of rain water has been added, the *rubber is to appear* at the surface of the solution as it is stirred.

This last act should take place in the sunlight, or in a building with a glass roof.

Sunshine is an important factor in the last stage.

PLANTATION RUBBER BADLY PACKED.

COMPLAINTS have been many of late, according to *Gummi-zeitung*, concerning the bad packing of plantation rubber, the chief count being the employment of cases that are not strong enough. This, it is needless to state, is false economy, for it is self-evident that the rubber, during protracted transportation, will suffer therefrom.

The Second International Rubber and Allied Trades Exhibition

LONDON, June 24 to July 15, 1911.

UNDER the wise leadership of Sir Henry A. Blake, president, and A. Staines Manders, organizing manager, assisted by an international committee of over 200 of the world's foremost rubber men, the Second International Rubber Exhibition has passed into history—"an unqualified success."

Readily accessible from all parts of the great city by underground tube, tram, omnibus and the ubiquitous taxicab, the Royal Agricultural Hall, Islington, in the northeastern section of the British metropolis, was admirably adapted, in magnitude, in convenience of arrangement, and in historical associations, to be the home of so important an exhibition.

The great interest in india rubber displayed the world over, which interest has developed marvellously since the first rubber

Under the direction of the competent executive, these exhibits were systematically grouped and arranged so that it was possible, as in a well-ordered book of reference, to turn to any section for information as to the character and quantity of its output. Supplement this with an equally comprehensive and well-arranged display of the manufacturing branches, the machinery and apparatus employed and the articles produced, all tastefully arranged in the spacious halls, artistically decorated for the occasion with bunting and the flags of all nations, and the general effect was very beautiful.

The arrangement for the comfort and convenience of visitors, for which the resources of the big building were ample, included a special room for members of the Rubber Club, a press room,



SIR HENRY A. BLAKE, G. C. M. G., DELIVERING ADDRESS AT THE RUBBER EXHIBITION DINNER.

exhibition was held in 1908, was in itself sufficient to provide a respectable patronage for the enterprise. But thanks to the daily press—more especially its most influential members—the attention of the general public was widely attracted to the exhibition, the universal employment of rubber in the home circle, the arts and industries serving to impress on the people the importance of all that the exhibition had to offer.

The cosmopolitan character of the exhibition had also its interesting side. The production of india rubber is conducted in the least known countries of the earth, inhabited to a great extent by peoples of whom we have but a superficial knowledge. From all of these came representatives of the growers and gatherers of and dealers in rubber, with specimens of their products, the implements used in collection and harvesting, and the devices employed in its preparation for market.

a hall in which the conferences were held, committee rooms, a postoffice, telegraph and telephone exchanges, and spacious, well conducted dining, refreshment, and tea rooms.

Special mention must also be made of the admirably arranged guide book, compiled by Manager A. Staines Manders, which, although somewhat voluminous, was so well classified and easy of reference as to materially enhance the comprehensibility of the great collection.

These, however, were but the settings of the exhibition; from the great collection of "pelles" of virgin rubber from the Amazon country, representing a value of many thousands of pounds, to the smallest tool or appliance or most insignificant map or chart, everything was displayed and classified so as to be readily accessible in the section in which it might be looked for, and in addition, a competent staff of attendants was on hand,



THE SECOND INTERNATIONAL RUBBER EXHIBITION IN THE ROYAL AGRICULTURAL HALL, LONDON, 1911.

able and willing to give the enquiring visitor every information.

At the private view to representatives of the press from all parts of the world, the excellence of the arrangements and the completeness of the exhibition, practically all of the exhibits being in place and ready for public inspection, came in for much approbation, and Manager Manders was warmly congratulated on the success of this second exhibition of 1911.

At the press lunch, at which the representatives of the press and invited guests were entertained, the menu for which was printed on a sheet of hard rubber, congratulatory speeches were naturally in order and the following telegraphic despatch was sent to King George V.:

"Sir Henry A. Blake, the President, and the Management

of the International Rubber and Allied Trades Exhibition, of which Your Majesty is the Patron, the Scientists, Chemists and Manufacturers coming from all parts of Your Majesty's Dominions, and the Representatives of the numerous Foreign Governments who are officially taking part in the Exhibition and who are assembled at the Press View at the Royal Agricultural Hall to-day, send you hearty greetings. We most earnestly pray that you and your Royal Consort may live long and have a prosperous reign. Should Your Majesty find time to honor

the Exhibition with a visit, it would give unbounded satisfaction."

His Majesty replied as follows:

"SIR HENRY A. BLAKE:

"Am commanded by the King to thank you and those who join with you for your kind message and good wishes. BIGGE."

FORMAL OPENING.

On the afternoon of June 24 came the formal opening. A large number of distinguished guests were present and a great gathering of delegates, exhibitors and visitors.

The Earl of Selborne, in declaring the exhibition open, said: "The rubber industry has been a great contribution, and will be a much greater contribution in the future, to the solution of the problem of the prosperity of some of the parts of the British Empire whose administration, from the financial point of view, has been a struggle for a good many years past. The effect of the development of the rubber industry in different parts of Africa and elsewhere, was to give these parts a degree of prosperity which they had not hitherto known. It is only quite

recently that the world has begun to realise the part that rubber is going to take in the arts and manufactures of the world."

Sir Henry A. Blake, president of the exhibition, said that manufacturers were only waiting for rubber at a reasonable price to enable them to look forward to an unlimited expansion of the uses of rubber. "When that time comes," he added, "rubber will be as staple a product as wheat. The time will soon arrive when prices will be easier and rubber can be put to the purpose of street paving."

THE RUBBER EXHIBITS.

Never before has such a complete, varied and interesting collection of rubber lots and samples been placed on view. Nearly every rubber producing country in the world was represented and many showed new varieties, products, and results that exhibited much careful experimentation.

CEYLON.

Beginning with Ceylon, twenty-four plantations were represented, the sample lots weighing some 4,500 pounds. They embraced beautiful samples of *Hevea* rubber in crepe, thick and thin, smoked and air-dried, pale and brown, together with biscuits, worm and scrap. There was also *Ceara* rubber, smoked and air-dried, and *Castilloa* smoked. The Ceylon Research Committee, and the Royal Botanic Gardens also exhibited rubber, photo-

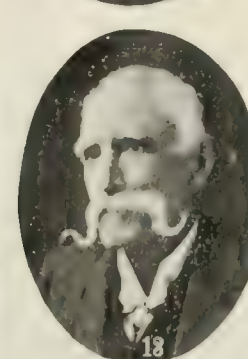


ALDEN'S "M. R." AT THE RUBBER EXHIBITION.

graphs, sections of rubber trees, and tapping tools. The committee in charge was: *Commissioner Appointed by the Government*, E. Rosling; *Delegates from Ceylon to the Exhibition (Appointed by the Committee in Ceylon)*, M. Kelway Bamber, A. L. Baines, G. H. Golledge, F. H. Layard, F. Crosbie Roles and H. Storey.

STRAITS SETTLEMENTS AND MALAY STATES.

The Straits Settlements and Federated Malay States, with a Malay house built of native woods as a rallying point in their extensive court, showed 160 lots of rubber weighing 2,000 pounds. They had practically all of the sorts mentioned in the Ceylon exhibit, with the addition of Rambong (*Ficus*) smoked sheet, Da Costa Block, *Hevea*, and rubber extracted from Pontianak (Jelutong). They also showed photographs, sections of diseased rubber trees, sections of Jelutong trees, a model of a coagulating plant, etc. The committee in charge was: *Commissioner*, Sir William Taylor, K. C. M. G. *Delegates*, Malcolm



1. Su He 1, A. Blake, G. C. M. G., 2. Robert B. Baird, 3. E. Pollet, 4. H. S. J. Maas, 5. E. Rosling, 6. Dr. Joseph Torrey, 7. A. Bethune, J. P., 8. H. J. Lovrink, 9. L. Hoff, 10. Dr. W. R. Tromp de Haas, 11. Ed. Bunge, 12. E. E. Buckleton, 13. H. A. Wickham, 14. A. Staines Manders, 15. J. C. Harvey, 16. Marchese Alessandro Faà di Bruno, 17. Dr. H. Johannes, 18. C. J. Scott, 19. Sir William Taylor, 20. Jac. Musly, 21. George Watkinson, 22. A. G. N. Swart, 23. J. G. Von Hemert, 24. J. A. Richardson, 25. W. Stuart Gordon, 26. W. H. Hildreth.



THE WORKING "GUAYULE" EXHIBIT OF THE CONTINENTAL RUBBER CO.

Cumming, R. W. Harrison, Leonard Wray, I. S. O., and E. Mitchell.

SOUTHERN INDIA.

Eight estates only exhibited from this portion of the British Empire. Their lots of *Ceara* crepe, black and white *Pará* crepe, and sheet from 4½-year-old *Hevea* trees were as good as the best, and the photographs showed plantations in an excellent state of cultivation. The South India Committee is: J. A. Richardson, *Chairman*; G. L. Acworth, H. M. Knight, Henry Small, C. E. S. Chambers, H. Sime, J. C. Sanderson, D. G. Macforlane, G. Croll, Erroll Sinclair, L. E. Kirwan, D. McArthur, R. L. Proudlock, R. L. Gudgeon, J. A. Harris, G. Romilly, J. Weymouth and H. P. Hodgson.

BRITISH AFRICA.

From the British East Africa Protectorate came samples of *Ceara* rubber from several plantations, together with samples of vine rubber from two *Landolphias*, M'goa rubber from a *Mascarenhasia*, and a great variety of beans used as catch crops. There was also a magnificent collection of photographs showing plantations, government farms and African scenery.

From the Uganda Protectorate were sent scrap, biscuit and crepe from *Hevea*, *Manihot*, *Funtumia*, a *Landolphia* and a *Clitandra*. There were also shown bottles of latex, seeds of rubber trees, sections of rubber tree trunks, lianes, and fruits and flowers of the *Funtumia*.

From the Gold Coast came samples of ordinary African rubbers as they appear in the trade; specimens

of cultivated rubber from *Heveas*, *Funtumias*, *Manihots*, *Landolphias* and *Ficus*, the samples prepared by various methods. There were also bottles of latex from all of their rubber yielding trees, seeds, herbarium specimens, trunks of trees, latex cups, tapping tools and photographs.

Those to whom the credit for the very informing exhibits are due are:

Commissioner, H. Powell, Chief, Economic Plant Division of the East Africa Protectorate. *Commissioners*, Francis Crowther, Secretary for Native Affairs; W. S. D. Tudhope, Director of Agriculture of the Gold Coast Colony, and *Commissioner* R. Fyffe, Ag. Superintendent of Forests, of Uganda.

BRITISH GUIANA, TRINIDAD AND TOBAGO, JAMAICA AND THE WEST INDIES.

Balata, rubber from *Sapium Jenmani*, and from planted *Hevea Brasiliensis*, excellent samples, covered the rubber exhibit of this colony. There was, in addition, many fine photographs and special publications that explained in detail almost anything one would desire to know concerning the resources of the country.

Trinidad furnished samples of rubber *Castilloa* and *Hevea*, together with seeds, plants, latex tapping tools, machines, diagrams of rubber production, photographs and herbarium specimens.

For Jamaica, John Barclay, Secretary of the Permanent Exhibitions Committee, sent specimens of plantation rubber and photographs.

From Dominica, Joseph Jones, Secretary of the Permanent Exhibitions Committee, sent samples of rubber, bottles of latex and fine herbarium specimens.



DISPLAY OF "AMAX" AT THE RUBBER EXHIBITION.

THE COMMISSIONERS AND COMMITTEES WERE:

Trinidad and Tobago—*Commissioners*, Prof. P. Carmody, F. I. C., F. C. S., Director of Agriculture, Trinidad; A. E. Aspinwall, Secretary, The West India Committee. British Guiana—*Commissioner*, F. A. Stockdale, B. A., F. L. S., Assistant Director and Government Botanist. Jamaica—*Commissioner*, A. E. Aspinwall.

BRAZIL.

The State of Pará exhibited a remarkable collection of its own rubbers, embracing in fine and coarse, Islands, Caviana, Yary, Xingu, Tapajos, Cameta. Fine and "weak" rubber from the Trombitas, "weak" from the Tapajos, "weak" from the Gurupy, Caucho block and strip, "Muriputa" from a *Sapium*, and smoked Islands Fine; Danin and Mellos smoking machine with rubber prepared by it. Pintos, "Lactina," Coutinhos specially prepared Pará rubber, etc.

The Musee Goeldi showed herbarium specimens of leaves and flowers of the principal rubber trees of the lower Amazon, including thirteen varieties of *Hevea*, a *Castilloa*, two *Sapiums*, one *Hancornia* and one *Landolphia*. Also a fine collection of *Hevea* seeds, stands of palms that furnish nuts for smoking. Photographs of rubber tapping and coagulating and a map of the State of Pará, showing rubber distribution.

The commercial association at Manaus exhibited 385 large pelles of Fine, and 91 balls of Caucho, samples of Amazonian rubber prepared as it is in the Middle East. This was supplemented by the most interesting collection of native-made rubber shoes, ponchos, pouches and toys ever assembled.

A most interesting exhibit from Southern Brazil was that of Ceara rubber from the *Manihot Dichotoma*, a rubber producer with a future.

Those who arranged the exhibits were:

Federal Government of Brazil—*Commissioner*, Dr. J. P. Lacerda. Amazonas—*Commissioner*, Senor Emilio Zarges, First Vice-President Associacao Commercial do Amazonas; *Delegates*, F. Alves Vieira, Consul General for Brazil in London; W. Gordon, Manager, Associacao Commercial do Amazonas, and William Harvey Mildreth. Pará—*Commissioner*, Dr. J. Huber (Musée Goeldi).

MEXICO.

The Intercontinental Rubber Co. established a miniature rubber factory for the purpose of showing modern methods of utilizing their guayule rubber. Needless to say, the exhibit was thronged by those interested.

La Zacualpa and one of its affiliations in *Castilloa* planting, showed smoked sheet, and blocked rubber coagulated in a centrifugal; also trunks of four and six-year-old trees, tapping knives, machetes and botanical specimens.

NETHERLANDS.

That the Government of Holland takes a vital interest in rubber and gutta-percha was abundantly attested in a host of ways in connection with the Exhibition. For example, its bureau for India prepared elaborate graphic charts, showing the exports of balata from Dutch Guiana for the last ten years—the area of planted rubber in the Dutch East Indies since 1907—the number of rubber plantations in all of their East Indian Colonies, the capital invested, and the location of the plantations. The same bureau showed experimental and laboratory machinery, tests of the elasticity of rubber and much more of a very practical nature.

All of the rubber manufacturers of Holland had their wares on exhibition and an excellent showing they made. The crude rubber houses in Amsterdam and Rotterdam also showed samples of rubber, gutta and balata.

The Dutch steamship lines and chemical and export houses also were represented by samples, photographs and charts.

All of the above was most interesting, but it was over the real crude rubber exhibits that one lingered longest.

Surinam showed balata sheet and block. Plantation rubber from *Hevea Brasiliensis*, and from the *Castilloa*. There were also samples of *Hevea Guyanensis* rubber. Then, too, there were shown sections of balata trees, young *Guyanensis* and many photographs. As a supplement to this, the Colonial Museum at Haarlem exhibited its own very complete collection of Surinam rubbers.

From some 150 rubber planting estates in Java, Borneo and Sumatra were assembled a great mass of rubber samples. They embraced *Hevea*, *Ficus* and *Castilloa*, and were as good as the best.

The Netherland India Committee, by maps and charts, by a collection of white ants, nest and cells, by specimens of *Hevea* trees diseased, badly tapped, by many rubber samples, gave a graphic representation of some of the actualities of rubber planting.

From the great Government rubber and gutta-percha plantations came samples of various rubbers and guttas coagulated in a score of different ways.

Associations of lease holders, rubber planters' associations, agricultural societies and rubber planters' unions—all from the Dutch possessions in the East—furnished rubber samples, soil samples, plant samples and photographs. All kinds of coagulation appeared from air-drying to fluoric hydrogen.

The whole Netherlands exhibition was under the direct charge of A. G. N. Swart, LL.D., president; H. S. J. Maas, honorary president, Dr. Tromp de Haas, commissioner for the Dutch East Indies, and the following committee members: Jac. Musly, J. G. von Hemert, K. H. H. van Bennekom, Ch. Moens, B. Bakker, Dr. A. H. Berkhout, S. P. van Efgnen, Prof. Dr. S. Hoogewerff, Prof. Dr. G. van Iterson, Jr., K. F. Katz, J. Merens, E. P. de Monchy Rzn, J. Pompe, Prof. Dr. P. van Romburgh, A. Slingervoet Ramondt and Prof. Dr. F. A. F. C. Went.

GERMANY.

German East Africa, German West Africa and the German South Sea possessions assembled samples of rubber that showed, at its best, Teutonic thoroughness, knowledge and enterprise. There were some 350 lots of rubber, partly from Governmental institutions, but mostly from some sixty plantations. They embraced the three *Manihots*, coagulated by oxalic acid, by a mixture of carbolic and acetic, by extract of Adanzonian fruits, by tamarind fruits, by salt, acetic and carbolic acid, by "Purub," smoked and unsmoked. There were *Castilloa* samples smoked, *Landolphia* rubbers coagulated by salt solutions, *Kickxias* air-dried, etc., etc., the results of hundreds of experiments. The Imperial Biological Institute at Amani, furnished much, the planters much, and the natives, under German control, sent in their samples of cultivated rubber and showed crude utensils of forest manufacture.

But remarkable as was the German Colonial exhibit, that of the Prussian Royal Testing Office would appeal to the rubber manufacturer more certainly. There were grouped sixteen machines, most of them new, for a variety of rubber tests. Several were specifically for testing the resistance, calorific transmission, and gas permeability of balloon fabrics. There was also the Schopper-Dalen new type of tensile tester, Hinrichsen's simplified apparatus for the electrolytical determination of sulphur in rubber, Laurent's apparatus for estimating the polarisation angle, Gasparini's apparatus for determining the sulphur-content of rubber, Martens-Schopper extensometer, Martens ball-pressure hardness tester, Martens fatigue tester, and Mail's machine for the abrasion test.

Five of the great German rubber manufacturers exhibited full lines of manufactured rubber goods. There were also excellent exhibits of German-made rubber machinery, of special chem-

icals used in rubber compounding, of reclaimed rubber, etc. For the chemical laboratory, Dr. Marckwalk and Dr. Frank exhibited new apparatus as follows: a centrifugal for rubber analysis, and a viscosimeter for solutions.

The German Committee were:

President—Dr. Golinelli, Privy Councillor of Legation. Official Members—Dr. Lewald, Privy Superior Councillor of Government; Mr. Goetsch, Privy Councillor of Legation; Dr. Busse, Councillor of Government. From the "Ständige Ausstellungskommission für die Deutsche Industrie"—Mr. Goldberger, Privy Councillor for Commerce, President; Dr. Kramer, Professor; Count von Schweinitz; Dr. Heiman, General Secretary. From the "Kolonial-Wirtschaftliche Komitee"—Mr. Ladewig, Director (President, Union of Planters, Kamerun); Dr. Friedrich Supf; Dr. Warburg, Professor; Mr. Warnholtz, Director (President, Union of Planters, East Africa); Mr. Besser, General Secretary. From the "Centralverein Deutscher Kautschukwaren-Fabriken"—Mr. Hoff, General Director; Mr. Seligmann, Councillor for Commerce; Mr. Spannagel, General Director; Dr. Soetbeer, General Secretary. General Commissioner in London—Dr. H. Johannes, Consul-General for Germany.

BELGIUM.

Royalty was much emphasized in the striking exhibits of the Belgian section. There was the "Honours Room," with its water-color portraits of the King and Queen; the "Queen's Flower" charity; the sale of "Edelweiss," the proceeds to go toward ameliorating the ravages of sleeping sickness, and other charitable work prosecuted by the Belgian rulers in the Congo. The Ministry of Colonies had prepared a rubber-growing chart of the Belgian Congo, showing planting results from the *Manihot Glaziovii* and the *Funtumia*. They also showed samples of rubber coagulated by a new process. There were maps, photographs and curios.

Perhaps the most graphic presentments were the dioramas, representing rubber planting in the Belgian Congo, and a forest of rubber lianes.

Various steamship lines, Congo railways, commercial companies, and great rubber trading companies, such as the "Kassai," were exploited by means of rubber samples, maps, photographs and charts.

The rubber section of the Antwerp Chamber of Commerce furnished a notable exhibit of rubber samples, eighty in number, all classified and labelled. There were also samples of rubber and photographs from the great rubber plantations owned by Belgians in the Malay States, Java and Borneo.

COMMITTEE FOR BELGIUM.

The Honorary President was M. Jules Renkin, Minister of the Colonies, while the Honorary Vice-Presidents included Count de Baillet-Latour, Governor of the Province of Antwerp; Mons. de Vos, Burgomaster of Antwerp; Mons. Francotte, President of Belgian Foreign Exposition Committee, and Colonel Thys, Administrator of the "Colonialasa" Company. The Acting Presidents were Ed. Bunge, President of The Antwerp Rubber Planters' Association, and E. Pollet, Consul-General of Belgium, London; the Acting Vice-President being N. Arnold, Director-General of the Colonial Ministry, Brussels. R. Ehrhardt, Secretary of the Antwerp Rubber Planters' Association, filled the post of Secretary-Treasurer, and L. Osterrieth, member of the Antwerp Rubber Planters' Association, that of Secretary.

In addition to the above-named officials, the body of the Committee, consisting of thirty-four members, included: the Duke of Ursel, Government Commissioner at the recent Brussels Exposition; G. Albrecht, Sheriff of Antwerp; Ch. Corty, President, and W. Van der Welde, President of Rubber Section, Antwerp Chamber of Commerce; Mons. de Schamphelare, Vice-

President of Syndicate Chamber, Ghent; H. de Wildeman, Conservator of Brussels Botanical Garden; L. Strauss, President of the Higher Council of Industry and Commerce; O. Englebert, President of Syndicate Chamber of Rubber Manufacturers, Liège, Mons. Jenatzsky, manufacturer, Brussels; Mons. C. Olyff and Mons. Smeyers, Directors in the Belgian Ministry of the Colonies; and Baron A. de Haulleville, Director of the Belgian Congo Museum.

Various commercial bodies were represented upon the Committee by groups of members. Prominent among these organizations were: Belgian Colonial Societies, ten members; Rubber Planters' Associations, Antwerp, seven members, Brussels, two members; Ghent, one member.

Count van der Burgh, General Secretary, and Mons. Bogaarts, Treasurer of the Belgian Foreign Exposition Committee, were members of the General Committee.

FRANCE.

(French Tropical Possessions.)

The Governments of Madagascar, of the French Congo and of French Cochinchina sent in very interesting samples of crude rubber and a notable collection of photographs. Two French planting companies, one in Cochinchina and one in the French Congo, also exhibited samples of *Funtumia* rubber. That from the French Congo was prepared by a hot-water process. They also showed maps of the plantations and many views.

(French Manufacturers.)

Three large rubber manufacturers showed mechanical rubber goods, insulated wire, hard rubber, tires, footwear, rubber sundries, clothing and smaller specialties.

(French Machinery.)

One of the most interesting of the machinery exhibits was the "Olier" machines for general rubber work. There were new profiling calenders, mixing machines, vertical spreaders, tire wrapping and unwrapping machines, presses for shaping and curing tires, etc.

(The French Committee.)

The Honorary President was the French Minister of the Colonies, while the Honorary Vice-President was the French Consul in London. The Committee was composed of forty-three members, twelve of whom formed an executive board, including the following officials: A. Haller, Member of the French Institute, President; Mons. Augagneur, ex-Governor of Madagascar, and Mons. Lamy-Torrillon, President of the Syndical Chamber of Rubber Manufacturers, Vice-Presidents; A. D. Cillard, manufacturer, Director of *Le Caoutchouc et la Gutta Percha*, General Secretary; Dr. Paul Colin, advocate, and Count Louis de Clercq, engineer, Assistant Secretaries; O. Dupuy, delegate of the Indo-China Rubber Planters' Association, Treasurer.

In addition to the above officials, the Board included: Dr. Chautard, Administrator of the Parisian Industrial Rubber Co.; Mons. Paris, Deputy from Cochinchina; Mons. Grellou, manufacturer; O. Labroy, Chief of the Museum of Natural History, and P. Breuil, consulting engineer, Editor of *Le Caoutchouc et la Gutta-Percha*.

In the general body of the committee, consisting of thirty-one members, were eleven professors and other academic experts, ten representatives of manufacturing and importing interests and ten members of an official character. Prominent among these ordinary members were the Governors-General of Western Africa, Indo-China and Madagascar; the Chamber of Commerce, Paris; the French Chamber of Commerce, London; the Professional Syndicate of Rubber and Gutta-Percha; the Syndical Chamber of Elastic Fabric Manufacturers; Mons. Sée and Baron F. de Wissocq, Administrators of the "Etablissements

as well as M. S. Mougnot, President, and M. Roger Noguès, Director General of the Société Sangha-Oubanghi.

INDIA, PORTUGUESE WEST AFRICA.

From this section were shown samples of *Cedra* rubber from the *Glaziovii* and the *Jequie*, tapping utensils employed and photographs, the exhibits being from Portuguese estates. The Commercial Association of Loando, also exhibited fine photographs of rubber plantings.

CRUDE RUBBER.

The Imperial Institute, London, furnished a graphic summary of the rubber resources of the whole British Empire. Twenty-eight countries were represented, and for all of them statistics, photographs and samples of rubber were shown.

Four of the dock companies, who store so much of the world's rubber, exhibited photographs of their warehouses and vaults. There were also exhibits arranged by rubber share brokers,

MANUFACTURED RUBBER GOODS.

English manufacturers who exhibited were few in number, but the exhibits were very comprehensive. The goods shown covered almost every ordinary use of rubber. Notable parts of the exhibits were the cinematograph show of the North British Rubber Co. Much interest also attached to the working exhibit of the Premier Reforming Co., who made waste rubber directly into goods without devulcanization.

A Japanese rubber factory also showed elastic webbings for aeroplanes, of their own make.

RUBBER MILL AND PLANTATION MACHINERY.

There were no less than twenty-five exhibitors of rubber machinery of English production, of which David Bridge & Co., Limited, had the most complete assemblage. The exhibits embraced washing, creping and blocking machines, coagulators, centrifugals, smoking and drying ovens for plantation work, a large line of regular rubber machinery, together with latex carts,



HERBERT WRIGHT.

Editor, *India Rubber Journal*, London.



HENRY C. PEARSON.

Editor, *The India Rubber World*, New York.



GEORGE STEINER.

Editor, *Gummi-Zeitung*, Berlin.

a crude rubber washing company, and the British Murac Syndicate, Limited.

As synthetic rubber is to be classed as crude rubber, the notable exhibit of the Caoutchouc Syndicate should be mentioned here. They interested many by converting Isoprene into rubber before a committee of experts. What the Isoprene cost did not appear.

SUPPLIES FOR RUBBER MANUFACTURERS.

Three companies showed almost every type of compounding ingredients, and rubber substitutes. There were also coagulating chemicals, and a notable exhibit of canvas for general mechanical rubber use.

RECLAIMED RUBBER AND MINERAL RUBBER.

With the Northwestern Rubber Co., Limited, the Rubber Regenerating Co., Limited, and the British Recovered Rubber Co., Limited, as exhibitors, this very necessary adjunct to crude rubber was well represented.

Mineral rubber also came in for much attention, the three exhibitors, A. H. Alden & Co., Limited, The American Wax Co., and the Canadian Mineral Rubber Co., all showing many informing samples.

tapping devices, latex cups in glass, aluminium, salt glazed ware, and so on, *ad infinitum*.

Of American concerns showing rubber making machinery were: The Farrel Foundry & Machine Co., The Birmingham Iron Foundry, Hohman & Maurer, Bramhall, Dean & Co.

THE RUBBER CONFERENCE.

Sir Henry A. Blake, G. C. M. G., opened the conference by reviewing briefly rubber growing the world over, stating that the acreage had doubled since the last exhibition. He spoke of synthetic rubber as something that for the present would probably not be manufactured commercially.

It was really a series of conferences at which various essays were read followed by most interesting discussions. As the papers are to form the subject of a special publication later, we here give only the titles of the essays and the names of the authors, and a very brief explanation of the subject matter.

"Rubber and Balata Industries of British Guiana." F. A. Stockdale, B. A., F. L. S.

Mr. Stockdale, in his paper, demonstrated the British Guiana government's progressive policy in establishing many branch experiment stations of the Department of Science and Agriculture. In practically all the most important districts of the colony these experiment stations are already definitely established or are in the making. The trials with *Hevea* at the experiment stations and on numerous private properties throughout the colony have shown that excellent growth is obtained practically all over the colony. He also covered the *Sapium Jenmani* in its natural habitat and under cultivation, and explained cultivation and its yield.

Turning from rubber the lecturer gave particulars of the balata industry which were most complete and interesting.

"African Vine Rubber." G. van den Kerckhove, consulting india rubber expert, Brussels.

Mr. van den Kerckhove in his paper pointed to measures taken against adulteration of indigenous rubbers; spoke of adulteration in the Congo, and of stringent laws which in time

Schidrowitz, Ph. D., F. C. S., and H. A. Goldsbrough, A. T. C., F. C. S.

Dr. Schidrowitz and Mr. Goldsbrough added to what they have already written on the viscosity of rubber solutions, giving many examples of experiments on plantation *Hevea* and *Funtumia*. They found in deresinated rubbers an increase in viscosity, as indeed would be expected. The practical value of these tests are that within the same species viscosity measurements give a direct line as to strength, general conditions and vulcanizing capacity.

"Rubber in Uganda: Retrospective and Prospective." R. Fyffe, Esq., assistant in Botanical Forestry and Scientific Department, Entebbe, Uganda, and E. Brown, F. L. S. (Joint papers.)

Rubber in Uganda, by Mr. R. Fyffe, covered an increase in exports: in the consideration of three native species—*Funtumia*, a *Landolphia* and a *Clitandra*, and where they grow, and the tapping of wild vines and coagulating by boiling. *Funtumia* shows



A. D. CILLARD,
Editor, *Le Caoutchouc et La Gutta Percha*,
Paris.



DR. WERNER ESCH,
Editor, *Gummi Markt*, Hamburg.



H. HAMEL SMITH,
Editor, *Tropical Life*, London.

resulted in stamping out frauds. He said that during "boom times" in crude rubber things began to drift back to their former state, but that a royal decree had put an end to that trouble.

"Theory of the Vulcanization Process." Prof. D. Hinrichsen, permanent member of the Royal Department for Testing Material, Berlin.

Dr. Hinrichsen spoke of the two theories, explaining the phenomena of vulcanization, one chemical and the other physical. He described the latter as the newer, and held that the taking up of sulphur by rubber was an exclusively surface action. He also reviewed the experimental evidences relating to both theories.

"Rubber Plantations in Cochin China." M. André Cremazy.

M. Cremazy covered French Cochin China very thoroughly. *Hevea Brasiliensis* is doing remarkably well, one company alone possessing 200,000 trees. So far the *Hevea* trees are free from disease of any kind, said the lecturer, and labor was very easily obtainable; the government regulations most favorable to planters.

"The Viscosity of Rubber and Its Solutions." Philip

no wound response and will stand three to four tappings a year, the herring bone being the best. Trees may be tapped to a height of 20 to 30 feet. The "V" knife is generally used, but a pricker is advised. Results are disappointing, five to six ounces of dry rubber per year being the average yield. Ceara rubber shows up well; it is tapped after removing the outer bark, smearing the tree with a coagulant and using a pricker. Twenty three-year-old trees yielded 27 ounces of dry rubber. The first Pará tree tapped, a seven-year old, yielded 16 1.2 ounces dry rubber; 118 *Hevea* trees, five months old, yielded 50 pounds dry rubber. These trees were 20½ inches in circumference.

"The Hygienic Conditions and the Maintenance of Health in the Rubber Planting Districts of the Tropics." W. Carnegie Brown, M. D., M. R. C. P., 32 Harley street, W.

Dr. Brown suggested much of value as far as laborers are concerned. For a white man going to the tropics he affirmed he must be mature, have no alcoholic tendencies, nor tendency to insanity; must be scrupulously clean, careful of what he eats and drinks. Believes that malaria and similar diseases could be easily avoided or combated.

"The Rubber Trees of Africa. Their Cultivation and Exploitation." Dr. E. Wildeman.

Dr. Wildeman described native methods of collecting vine rubber. He said that cutting the vine off did not kill it, for it reproduced itself. He also suggested that mechanical treatment of vine sections might be possible, and believes that the cultivation of vines in Africa will yet be accomplished.

"Discovery of the Pará Reagent." Wilhelm Pahl, Dortmund.

Herr Pahl spoke of smoke coagulation and carbonic acid. Criticised the use of acetic acid and described the apparatus for coagulating large quantities of latex by the use of carbonic acid. He also stated that his firm had patented this use of carbonic acid all over the world and was prepared to defend their right.

"Rubber Trees of the Amazon." Dr. J. Huber, Pará, Brazil.

Dr. Huber covered chiefly the rubber reserves of the Amazon. He believes that the rubber tree of the lower Amazon is the

ered a notable address on the sweeping reforms in the Belgian Congo. He affirmed an absolute abandonment of the working of estates by monopoly; the native's right to gather rubber with no tax. His ability to sell at market price wherever he wishes. Foreign settlers can occupy any tract not already leased; can buy of the native or collect rubber by their own labor. He proclaimed the method of government as "free trade by free labor."

Mr. Clayton Beadle described a new method of testing rubber by using the energy of a falling pendulum. He suggested it as a quicker and easier way of testing than any now in use.

Dr. Henry Stevens in his paper on raw rubber tests devoted himself very largely to results obtained by Professor Schwartz's hysteresis machine, illustration and description of which appears in another column.

Mr. H. Hamel Smith's paper covered chiefly the labor question, particularly in the Malay States. He figured that a million laborers were needed for the Malay States and as many more for



"THE INDIA RUBBER JOURNAL" TROPHY.



"THE INDIA RUBBER WORLD" TROPHY.



"GREMER'S RUBBER NEWS" TROPHY.

Brasiliensis, while that of the northern regions is the *Benthamiana*, which produces a rubber nearly equal to the *Brasiliensis*. He predicted a considerable increase in the quantity of rubber from the lower Amazon.

"Some Diseases of *Hevea Brasiliensis*." E. Mitchell.

Mr. Mitchell covered *Hevea* diseases very thoroughly. The white ant, canker, leaf, bark and root diseases were discussed very thoroughly and remedies suggested.

"Tapping Experiments on Pará Rubber Trees." Dr. Tromp de Haas.

Dr. Tromp de Haas explained *Hevea* tapping experiments in Java which were very complete, and advised that the largest quantity of rubber was collected from trees that were tapped every day.

"The Para (*Hevea*) India Rubber Trees in the East." H. A. Wickham.

Mr. Wickham in his essay objected strongly to close planting and clean weeding, and brought on an exceedingly spirited discussion by so doing.

Following the Belgian reception Monsieur M. Wendelen deliv-

Ceylon and other parts of the East. He suggested new plans for their health and comfort.

"Present Condition of the India Rubber Question in West Africa" (with photographed illustrations). M. Auguste Chevalier, explorer, doctor of science, professor in the Paris Museum.

"The Crude Rubber of Peru." Dr. Emilio Castre, of Peru.

"Mechanical Preparation of the Rubber in the Factories." M. Boutarie.

"Some Notes on the Agglutination of Rubber Corpuscles." Hermann C. T. Gardner, F. C. S., M. P. S., analytical and consulting chemist, 45 Caterham road, Lewisham, S. E.

"The Constituent Parts of *Parthenium Argentatum*, the Original Guayule Caoutchouc Plant." Dr. Paul Alexander.

"Mechanical Rubber Tests." Herr Memmler Dipl. Ing.

"Notes on Pará Rubber Cultivation." Walter Fox, late Superintendent Forest and Gardens, S. S.

"Centrifugalization of Rubber." D. S. Smith, Tobago.

"Remarks on the Chemical Analysis of Raw Rubber." J. G. Fol, Chemical Engineer to the Dutch Government.

An important meeting of the International Rubber Testing Committee was held, Dr. A. H. Berkhout presiding. After the reports of the committees, a plea for the universal standardization of rubber, it was announced that Professor Huber expected to form a branch of the society for Brazil.

IMPORTANT DINNERS.

Among the important dinners incidental to the exhibition were the West India dinner, given by the West India Committee at the Agricultural Hall; the international banquet, held at Connaught Rooms, and the Netherlands banquet, held in the Whitehall rooms of the Metropole Hotel.

The feature of the International Banquet was the presentation of a check for \$5,000, and an address to Mr. H. A. Wickham, the pioneer of the rubber industry in the East, by the Rubber Growers' Association. There was also given him an annuity, purchased with another \$5,000. There was presented to the representative of Kew Gardens an elegant piece of silver plate.

Grenier's Rubber News, Federated Malay States, silver trophy, value 25 guineas [= \$125], for the best sample of commercial plantation rubber grown in the Federated Malay States or Ceylon.

THE INDIA RUBBER WORLD, New York, trophy valued at \$1,000, for the best system of extracting latex from the *Castilloa elastica*, without permanent injury to the tree. A silver cup, the stem representing the trunk of a *Castilloa elastica*, terminating at the top in a crown of the characteristic foliage of this species, that supports a vase, of graceful form and suitably inscribed. Beside the trunk of the tree stands a man, with a machete in one hand and calabash in the other, tapping the tree in the destructive fashion practiced by wild rubber gatherers.

The Association des Planteurs de Caoutchouc trophy, a handsome silver bowl, value 50 guineas [= \$250], for the best sample of plantation rubber grown in the Dutch East Indies.

The West India Committee trophies. Two solid silver cups, of attractive design, for competition by West Indian exhibitors.



THE WEST INDIA COMMITTEE TROPHY.



THE ASSOCIATION OF DES PLANTEURS DE CAOUTCHOUC TROPHY.



THE PRESIDENT'S TROPHY.

TROPHIES.

A notable feature in connection with the exhibition was the offer of a number of valuable trophies as awards for special achievements in the various branches of the rubber interest. For these there were some 200 contestants. The conditions of competition were simplified as far as possible so that no entry might be barred by red tape or informality. No entrance fee was required, the only condition being that entries were required to be in hand by a certain date. The trophies were as follows:

The President's Trophy, a handsome silver cup presented by Sir Henry A. Blake. (1) To the manufacturer showing the greatest variety of articles made from rubber, or it may be for one article only; (2) or to a manufacturer of machinery or for some labor-saving device that would benefit manufacturers or planters; (3) or for some simple invention of great value to all connected with the rubber industry; (4) or to the exhibitor of some article which demonstrates how largely rubber may be used for general and commercial use in a way hitherto unknown.

The Rubber Growers' Association, London, gold, silver and bronze medals for the best samples of plantation and other rubber from any country.

The India Rubber Journal, London, a silver shield, showing natives tapping plantation *Hevea* trees, value 100 guineas [= \$500], for the best sample of plantation Pará rubber shown at the exhibition.

(1) For the finest prepared sample of plantation rubber of any species; (2) for the best specimen of balata.

The gold medal of the Kolonial Wirtschaftliches Komitee, for the best process and method of extracting, coagulating and preparing rubber from *Manihot*, *Kickxia* and *Ficus*.

The awards were as follows:

PRESIDENT'S TROPHY.

Silver Cup—

Harburg and Vienna India Rubber Company.

RUBBER GROWERS' ASSOCIATION.

Special Gold Medal—

Associacao Commercial do Amazonas, Manaus, Brazil.

Gold Medals—

Classes 1, 2, 3—Highlands and Lowlands (Pará) Rubber Co.

Class 1—Sunnygama (Ceylon) Tea Estates Co.

Class 4—Galphele Tea and Rubber Estates, Limited.

Silver Medals—

Class 1—Selangor Rubber Co.

Class 2—Tremellye Rubber Co.

Class 3—Scafield Rubber Co.

Bronze Medals—

St. George Rubber Estates, Limited.

Bukit Rajah Rubber Co., Limited.
Batu Caves Rubber Co., Limited.

Highly Commended—

Class 1—Sumatra Para Rubber Plantations, Limited.
Federated Malay States Rubber Co., Limited.

Commended—

Class 1—Rosehaugh Tea and Rubber Co., Limited.
Ceylon Tea Plantations Co., Limited.
Daranakande Rubber Estates, Limited.
Kintyre Tea Estates Co., Limited.
Class 2—Rembia Rubber Estates, Limited.
Class 3—Gikiyanakande Estate.

INDIA RUBBER JOURNAL

Silver Shield—

Samples still under examination.

GRENIER'S RUBBER NEWS.

Silver Trophy—

Samples still under examination.

INDIA RUBBER WORLD.

Silver Cup—

Award not made, as conditions were not fulfilled

ASSOCIATION DES PLANTEURS DU CAOUTCHOUC.

Silver Bowl—

Société de Cultures, Nieuw Tjasalak, Java.

WEST INDIA COMMITTEE.

Solid Silver Cup—

Rubber—

Mr. Hodgson, Plantation Noitgedacht, British Guiana.

Balata—

Consolidated Rubber and Balata Estates, British Guiana.

Botanic Exhibit—

Department of Agriculture of Trinidad and Tobago.

West Indian Comprehensive Exhibit—

Permanent Exhibition Committee of Trinidad and Tobago.

KOLONIAL WIRTSCHAFTLICHES KOMITEE.

Gold Medal—Not awarded.

Honorable Mention—

Kickxia rubber—Dr. Fickendey.

Specially Commended—

Kickxia rubber—Dr. Christy.

Ficus elastica—Herr Preuss.

Highly Commended—

Manihot glaziovii—Mr. V. Lommel.

Dr. Joseph Torrey, of the Northwestern Rubber Co., Limited, was presiding officer at a number of the conferences and proved himself a master of the art.

Quincy Tucker, of Boston, who is connected with a rubber planting company in British Guiana was one of the visitors to the International Rubber Exhibition. He represented there a Demerara newspaper very successfully.

The exceedingly capable organizer who made the International Rubber Exhibition such a success is at work upon a Cotton, Fiber and Allied Trades Exhibition to be held in London in 1913. Mr. Manders probably does not appreciate it yet, but this is something that will interest rubber manufacturers almost as much as a crude rubber exhibition, and he is sure of their gate money anyway.

A GRAPHIC REPRESENTATION.

ALDEN'S "M. R.," at the London Rubber Show exhibited two small strips of compounded rubber to which were attached a

weight of 287 pounds. The whole story of the test is so completely and specifically told in the figures following that commendatory adjectives are unnecessary.

Components—40 per cent. Alden's M. R., 25 per cent. smoked Pará; one strip. Forty per cent. Alden's M. R., 25 per cent. smoked Ceylon; another strip.

Original size of each strip—6 ins. long x $1\frac{7}{8}$ ins. wide x $\frac{15}{16}$ ins. thick.

Weight suspended on each strip—287 lbs.

Duration of test—June 24 to July 14 (18 days), without breaking.

Size at end of the term—Pará strip, $17\frac{1}{4}$ ins. x $\frac{12}{16}$ in. x $\frac{5}{16}$ in.; Ceylon strip, 15 ins. x $\frac{16}{16}$ in. x $\frac{5}{16}$ in.

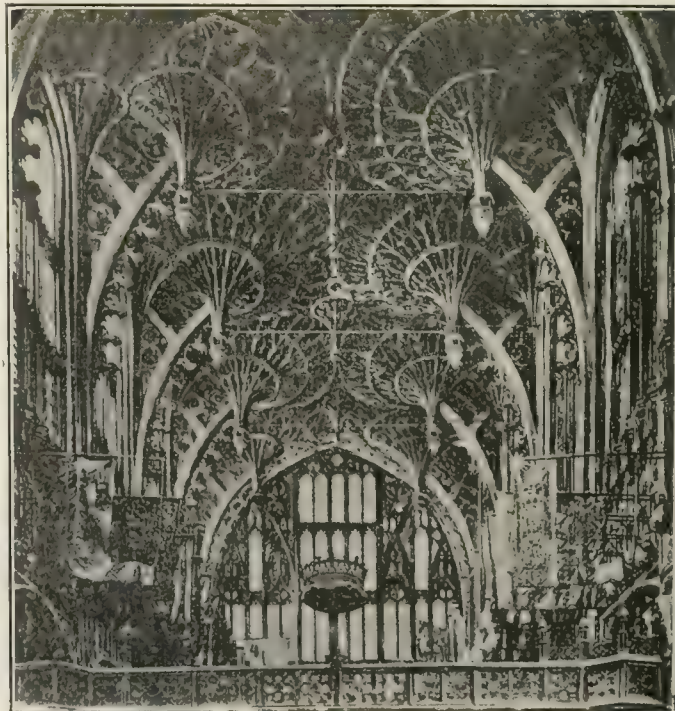
Permanent elongation after removal of the weight—Pará, $7\frac{3}{16}$ ins. long, gain of 20 per cent.; Ceylon, $7\frac{3}{16}$ ins. long, gain of 20 per cent.



A SEVERE TEST.

AN ENGLISH USE FOR GARDEN HOSE.

THE use of rubber hose in cleaning buildings as an adjunct to the vacuum system, is not altogether a novelty. For years the ornate carvings in Westminster Abbey have been



VIEW OF HENRY VII CHAPEL IN WESTMINSTER ABBEY.

cleaned by an air blast carried through lengths of rubber hose. The illustration shows Henry VII chapel in Westminster Abbey, and the platform on the left, where the cleaners are at work.

THE accepted authority on South American rubber—"The Rubber Country of the Amazon," by Henry C. Pearson.

Rubber Club of America at Point Shirley.

MIDSUMMER OUTING.

THE annual mid-summer outing of the Rubber Club of America, was held July 7 and was one of the most successful in the history of the club. The day's enjoyments composed golf at the Woodland Golf Club for the forenoon, a trip down the harbor and circling the islands on the steamer *Griswold*, with luncheon aboard, followed by sports and banquet at Point Shirley Club and a moonlight sail back to Boston.

The golf tournament was held at the Woodland Golf Club in Newton in the morning. The prize for the best gross score was won by W. G. Page, who turned in an 85 card. The best net score, 69, was made by W. L. Wadleigh, while A. W. Stedman, J. H. Learned and R. C. Chipman tied for second place. The first prize for golf for the best gross was a beautiful liqueur set. For the best net a travelling clock, and for the second net a bottle in a velvet basket.

covered blue overalls, and flower-bedecked straw hats. The Suffragettes wore bright red kimono coats, white petticoats and white hats. The umpire tried to preserve order in a full-length silk kimono.

The nines lined up as follows: Suffragettes—H. Fuller p, R. L. Rice c, F. C. Hood 1b and capt., A. W. Stedman 2b, George Mayo 3b, J. F. Dunbar ss, A. E. Lloyd lf, A. T. Baldwin cf, H. C. Berle rf. Married Men—W. G. Page p, R. L. Chipman 3b, W. L. Pitcher 1b and capt., R. Fuller lf, F. Gove rf, H. G. Tyler c, H. H. Henderson cf, F. Strain ss, H. A. Walker 2b.

H. C. Pearson, the umpire, was mobbed in the very first inning for ruling that left-handed batters should run to third base and not to first. Later Mr. Pearson returned to the game, minus his kimono, and lived to attend the banquet.

R. L. Chipman made a base hit, and then stole the remaining bases so rapidly that he turned it into a home run. It is rumored



SOME CLUB MEMBERS IN FRONT OF POINT SHIRLEY CLUB HOUSE.

Vice President Francis H. Appleton was called out of town on important business the morning of the outing. He sent, however, as proxies, his son, his nephew, and his sincere regrets.

At 2 p. m. the party sailed down the harbor on the steamer *Griswold*. A band of 21 pieces furnished music, one of its selections being the composition of a member of the club, Dr. Joseph C. Stedman. To amuse the rubber men the entertainment committee included in the party "Charlie" Lamb, the "Lil-liputian," who was rigged out as a policeman and carried a curious rubber billy and rubber revolver; Nat Farnum, known as "That Minstrel Man," and Jack Ware, "The Daffydill."

The boat steamed leisurely down the North shore as far as Marblehead, when it retraced its course, landing the party about four o'clock at the Point Shirley Yacht Club.

Joseph W. Work, whom all of the rubber shoe manufacturers well know, happens to be the president of the Point Shirley Club, and his cordial welcome to the Rubber Club, of which he has long been a member, made everyone feel at home from the start.

Here, after a short parade over the grounds behind the band, those who were to take part in the baseball game introduced something new in uniforms.

The Married Men appeared in spotless corsets, which partially

that he plans now to leave the crude rubber business and become a professional baseballist. By the way, three men were tied for the third golf prize. In the play-off Chipman won.

A playground ball, about twice the size of a league baseball, was used and the hits came fast and furious. Some clever plays were made by Capt. Hood of the Suffragettes and Capt. Pitcher of the Married Men, and wonderful near-catches were made by the outfielders.

After the game the members were handed a large piece of crude Pará rubber and allowed to guess its weight. First prize was won by Dr. J. C. Stedman, who guessed its weight. 13 pounds seven ounces exactly. H. H. Noyes guessed 13 pounds 8 ounces; J. F. Odell, thirteen pounds 9 ounces; F. L. Moses, thirteen pounds four ounces.

In the rubber guessing contest the first prize was a silver and glass "night cap" set; second, an elaborate stein; third, a cut glass and silver ash tray; fourth, a stein.

Frederic C. Hood, of Boston, president of the club, presided at the banquet in the evening. With him at the head table were Arthur W. Stedman, H. C. Pearson and John H. Flint. A facsimile in rubber of a chicken just emerging from its shell—with a whistle attachment—was placed at each plate for a souvenir.

The fish dinner was as good as any that "Taft" had ever prepared in his palmiest days. The menu was as follows:

MENU.

Poulet en Caoutchouc, Sur Glace		
Clam Broth, Whipped Cream		
Steamed Duxbury Clams		
Baked Chicken Halibut, Rabbit Sauce		
(Point Shirley Style)		
Cucumbers	Olives	Radishes
Baked Live Lobster a la Taft		
Saratoga Potatoes	Salted Nuts	
Milk Fed Broiled Chicken on Toast		
Fresh Green Peas	Delmonico Potatoes	
Lettuce and Tomato Salad		
Roquefort and Liederkrantz, Toasted Crackers		
Frozen Strawberry Mousse		
Cake	Coffee	
<i>Sauterne</i>		
<i>Feu de Clicquot.</i>		
<i>Roederer's Carte Blanche</i>		

There were no speeches, the entire outing being informal. The band played and the members joined in the choruses of



PRESIDENT HOOD MAKING A HOME RUN.

popular airs. Later the party again boarded the *Griswold* and enjoyed a moonlight sail back to Otis wharf. Chairmen of the committees that had the outing in charge were: H. P. Fuller, entertainment; Chas. A. Coe, dinner; R. L. Chipman, sports.

Among those attending the outing were: A. S. Foster, C. J. Bailey, J. C. Rockwell, E. L. Phipps, W. L. Wadleigh, George H. Cosby, Irwin Eichengreen, C. S. Hayward, G. H. Gleason, H. G. Tyler, H. C. Benchley, F. E. Stone, F. H. Appleton, Jr., W. S. Goodwin, E. B. Kelly, M. G. Hopkins, G. E. Habich, C. B. Archer, H. H. Nance, W. H. Reilly, W. I. Swasey, H. L. Beal,

C. F. Proctor, C. A. Coe, R. L. Rice, J. F. Dunbar, J. C. Stedman, H. P. Fuller, A. A. Glidden, W. G. Page, W. H. Lyons, A. C. Meyers, F. M. Schwab, R. G. Fuller, G. D. Hazen, E. A. Fargo, A. E. Culter, G. L. Hargraves, R. F. Geddes, G. J. Waxel-



A. W. STEDMAN, OF THE "SUFFRAGETTES."

baum, W. L. Gough, C. L. Parkers, W. N. West, F. T. Carlton, A. A. Brigham, Milton H. French, G. E. B. Putnam, W. S. Lawrence, Arthur Reeves, Hiram B. Meyers, Gerald Gunnerson, S. A. Norton, J. H. Learned, W. H. Gleason, F. L. Tufts, A. B. Pimm, E. V. Salisbury, L. E. Appleton, A. E. Lloyd, H. C. Pearson, Thomas Strain, F. G. Gove, H. H. Henderson, F. H. Plenty, W. L. Proctor, H. D. Hamilton, J. B. Leeman, J. I. McLaughlin, J. W. Work, G. H. Mayo, E. W. Perkins, S. G. Mills, R. S. Hodges, H. O. Mason, T. F. Kimball, G. N. Nason, L. H. Duclos,



WALLACE G. PAGE, OF THE "MARRIED MEN."

G. J. Conlin, J. S. Lowman, F. L. Moses, C. McDougall, F. B. M. Corson, A. F. Solberry, H. C. Werner, C. M. Dederich, J. E. Odell, A. T. Baldwin, E. Jacoby, H. H. Noyes, Benjamin Taft, P. L. Rider and S. P. Sharples.

The Editor of THE INDIA RUBBER WORLD was enthusiastically toasted at the banquet as the founder of the club. Actually the toast should have embraced George P. Whitmore, whose hard work and wise suggestions made the beginning infinitely easier.

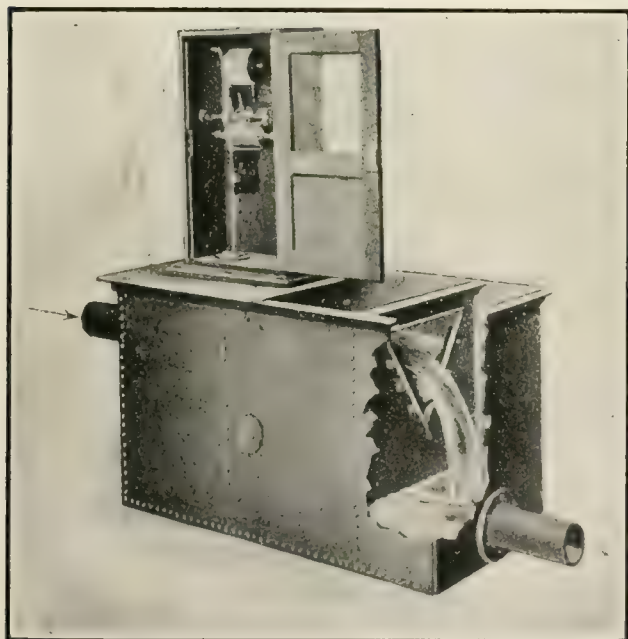
President Frederic C. Hood, who has always disclaimed any ability to address dinner crowds, proved conclusively that he had underrated his own gifts. As a presiding officer, with his clear enunciation, strong voice, and perfect poise, he is "all to the good."

THE "LEA" WATER FLOW RECORDER.

DEVOID of complicated mechanism, and employing for measuring the flow, a simple V notch plate, by means of which great and unvarying accuracy is ensured at all flows, the "Lea" Water Flow Recorder, is ideal for the measurement of boiler feed water, pump discharges, acids and other liquids. It is useful wherever a continuous record of the running of boiler plant, production of steam, evaporation per pound of coal, and flow of water are kept, and is conducive to economy and efficiency in operation.

Working under a head of about 18 inches, it can be installed in existing plants; it has no mechanism in contact with the water and the same instrument can be varied as to measuring capacity, by simply changing the notch plate for one of wider or narrower angle aperture. The first cost of this device is the last. Engine and boiler plants aggregating upwards of 500,000 horse power, have Lea recorders now in use.

The accompanying illustration shows the instrument complete, with its V notch tank, as applicable to any of the purposes above stated. It is guaranteed to produce records which shall be



A SIMPLE FLOW-RECORDING INSTRUMENT.

within one and one-half per cent. of absolute accuracy by weight and in which the average error, due to variations in temperature over a range of 50 degs. Fahr. (*i. e.* 25 degs. Fahr. on either side of the normal) shall not exceed 0.5 per cent. Various methods of applying the records are shown in the catalogue published by the manufacturers. No erection is required except connecting inlet and outlet, while its reasonable first cost has the additional advantage of being the last. [Yarnall-Waring Company, 1109 Locust street, Philadelphia, Pennsylvania.]

THE OBITUARY RECORD.

WELLING G. SICKEL.

AFTER suffering from heart trouble for nearly two years, Welling G. Sickel passed away at his summer home at Spring Lake, New Jersey, July 15.

Born at Trenton on November 15, 1858, Mr. Sickel received his education at the Trenton Academy. After leaving the academy he took a course at the business college of Rider & Allen, and from there entered the employ of the Mercer Pottery Co. At the end of two years, spent in gaining practical knowledge of the potter's art, Mr. Sickel became western repre-



WELLING G. SICKEL.

sentative for the pottery company. He remained about six years with this concern, and in 1885 organized the United Rubber Co. at Trenton, which subsequently built up a very large business in railway supplies.

In 1897 Mr. Sickel was elected mayor of the City of Trenton, receiving the largest majority ever given a candidate for that office. During his administration many important improvements were effected, and the foundations laid for many lasting monuments to his untiring activity for the general welfare of the people. The Trenton Art School (now one of the foremost of its kind in the country) was launched through the efforts of Mr. Sickel. Trenton's Free Public Library was urged by him in every message to the city council, and he appointed committees that afterwards settled down to foundation work.

Mr. Sickel was for some years Vice President of the United and Globe Rubber Co. In November, 1909, along with United States Senator Elkins, he disposed of his holdings and withdrew from the company. Later he became associated with the Hewitt Rubber Co., with a factory at Buffalo, New York.

The funeral was held in Trenton on the 18th, the interment being at Riverview Cemetery. Prominent men from the rubber trade in Trenton and from a distance were in attendance.

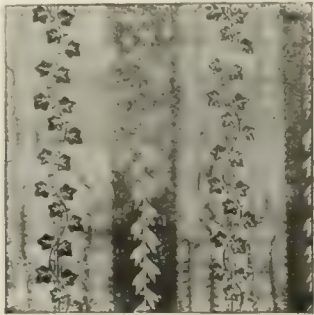
A PRACTICAL WATERPROOF VEIL.

A GREAT discomfort to women for a long while has been the fact that rain either spoiled outright or impaired the looks of veiling of any sort. This difficulty has at last been overcome and a waterproof veil called the "Grenadine" is the result which can be had at one of New York's leading stores. The waterproofing of transparent fabrics affords a new field for that important branch of industry, bringing it more closely in touch with the development of fashions.

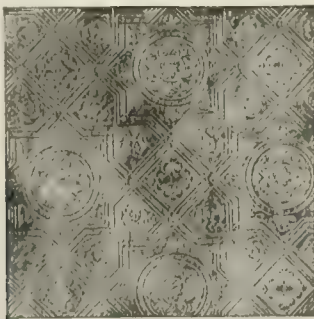
New Rubber Goods in the Market.

ARTISTIC RUBBER CARPETINGS.

DUSTLESS, noiseless, durable, easily laid and cleaned, rubber matting, in its familiar corrugated form, has found extensive employment as a floor covering in business apartments and other places of public resort, for halls and corridors, the floors and steps of automobiles, etc.



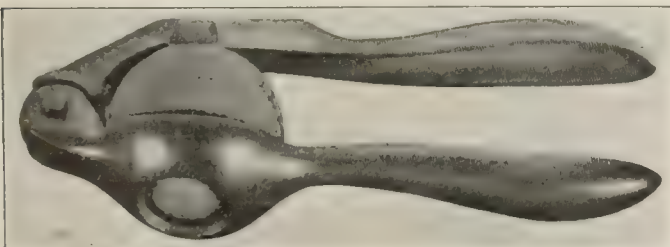
Exception has been taken to the old style corrugated matting, on account of the severe plainness of its appearance, but this objection is removed in new, patented rubber carpetings, approved designs of which we show. A decided improvement, as



far as appearance is concerned, it is claimed that these carpetings wear well and are easy to clean. Samples with prices, etc., may be obtained from the patentees and manufacturers. [Voorhees Rubber Manufacturing Co., Jersey City, New Jersey.]

A NEW GOLF BALL MARKER.

THERE is no argument against the marking of golf balls. In fact the ordinary golfer is very much in favor of such means of identification. That is why there are so many purchasers for such an implement as the "Goodspeed," for example. It is a

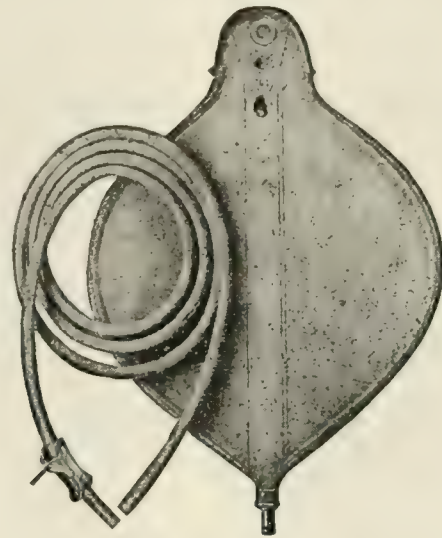


THE GOODSPEED GOLF BALL MARKER.

very simple tool, nickel plated, with hardened steel die initials and an inking equipment. Any one that can play golf can use it. [Arthur Goodspeed, 188 Virginia avenue, Jersey City, New Jersey.]

A SUPERIOR SYRINGE OUTFIT.

The syringe outfit, shown herewith, consists of a pure gum, hand-made bag, re-inforced with a frictioned strip running from top to bottom, in which the hanging eyelet is introduced. The advantage claimed for the outfit, which is intended especially for

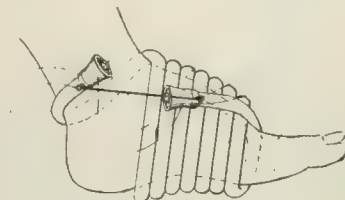


GOODRICH SURGEON'S SYRINGE OUTFIT.

physicians' and travelers' use, are lightness, superior quality and portableness, as it folds into a small, compact package, all of which are qualifications that the average user will also appreciate. [The B. F. Goodrich Company, Akron, Ohio.]

A VEST POCKET FOOT BANDAGE.

THIS is really a length of tubing, capped at each end and fitted with couplings for attaching the ends when in position. In



A CONVENIENT FOOT BANDAGE.

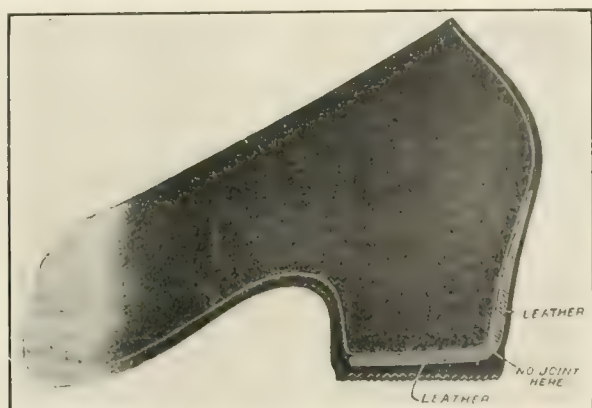
use it may be filled with hot or cold water and can be applied to almost any part of the anatomy. [U. S. Patent No. 970,907.]

DOUBLE FABRIC TIRE PROTECTION.

To lengthen the life of the fabric means to prolong materially the serviceable life of a tire and the double fabric system of tire protection has been devised to accomplish this. The Murray Patent "Interlock" inner tire, a recent development of the double fabric protection idea is shown. It is in reality a tire within a tire, the inner tire being made as heavy as the outer, of 4 to 6-ply Egyptian cotton fabric, laminated, with a self-sealing flap reinforcing the rim and sides. It is claimed that it is made hard enough to turn nails, strong enough to hold blowouts and support old, weak or overloaded tires until they are past all wear, when it can be removed for use on another tire. [Double Fabric Tire Co., Auburn, Indiana.]

LEATHER INNER HEEL RUBBER.

TO PREVENT heel plates and small heel shoes, short fits and run-down heels from breaking out or cutting through rubbers at the back, The Kaufman Rubber Co., Ltd., Berlin, Ont., Can., have brought out the improved form of rubber for women we illustrate. The inner heel shown is made of leather and jointless



RUBBER WITH LEATHER INNER HEEL.

and of the many placed on sale to give the improvement a thorough practical test, all have proved successful. The new rubber is an addition to the manufacturers' line of "Life Buoy" rubbers for women.

PROGRESS IN RUBBER SHOE MAKING.

ADNA D. WARNER, superintendent of the Mishawaka Woolen Mfg. Co., Mishawaka, Indiana, is the inventor of a process in the manufacture of rubber footwear, which, simple as it looks, is a



CROSS SECTION OF WARNER'S SHOE.

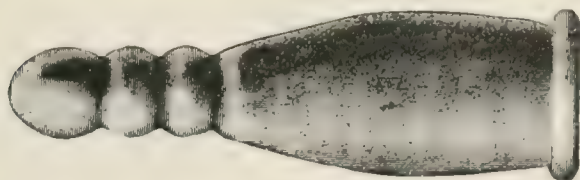
step in the right direction. It consists in brief in forming an in-sole and a narrow filling sole, under great pressure, into one sole. The pressure leaves the article recessed all the way round, so that when placed upon the last or tree the outer sole and upper are instantly and easily affixed. [United States Patent 989,089.]

THE BROOM VACUUM CLEANER.

A VACUUM cleaner, the nozzle of which slips over a broom, is something that the housewife is sure to appreciate. It will give her the impression that she is still wielding the tools of her trade, and at the same time doing it in the most approved modern fashion. Such is the "Pneurac," which will doubtless greatly increase the household uses of hose and insulated wire. [John Wanamaker, New York.]

POPULAR GERMAN NIPPLE.

A FORM of nipple that has of late appeared upon the German market is herewith shown. The illustration tells all about it as

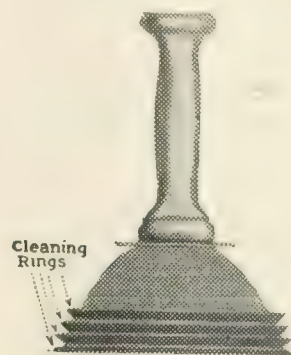


GERMAN TYPE OF NIPPLE.

the novelty is wholly in its shape. [Gummiwarenfabrik M. Steinberg, Koln-Lindenthal, Germany.]

THE CORRUGATED CLEANER.

Force cups are almost as old as the rubber trade itself, but the "Little Plumber Force Cup and Corrugated Cleaner" is new and what is more to the point, good. The corrugations which en-



LITTLE PLUMBER FORCE CUP. [The Quaker City Rubber Co., Philadelphia, Pennsylvania.]

circle the bell shaped mouth, are found to be very effective in keeping the cup from collapsing when in use. The corrugations also form a sort of brush that is most useful in cleaning enamelled fixtures, etc. In addition to the type shown in the illustration, there are two plungers, large and small, when the corrugations core the whole of the outer surface. This is used now as a plumbers tool and has been found to be of great merit. [The Quaker City Rubber Co., Philadelphia, Pennsylvania.]

SYNTHETIC GUTTA PERCHA.

Nor exactly that either. The product is called "Synthenite," and it is produced by a company who are large manufacturers of Gutta Percha fuse. The new product does not oxidize as does gutta, and is therefore not as likely to crack in dry climates or at low temperatures. Manufactured by the Insoloid Fuse Co., Ltd., Denver, Colorado.

WATERPROOF FOLDABLES.

As a rule pails, tubs and baskets are nuisances, necessary ones to be sure, but they are bulky, intractable, and while useful in camp are a trouble en route. The whole line has been made foldable and, therefore, infinitely more usable. This line em-



DUPLEX FOLDABLES, OPEN AND CLOSED

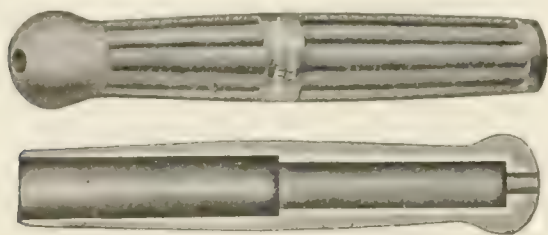
braces water pails, auto pails, lunch baskets, clothes baskets, wash basins, foot tubs, bath tubs, fishing creels, minnow buckets, tube trunks, tool cases, etc. They are all made of strong waterproof canvas, the metal parts of spring steel, rust-proofed. They are "knock down" and fold into very small compass. [The Planet Company, Westfield, Massachusetts.]

A NEW MOTORCYCLE GRIP.

THE strenuous hold on the handle bar grips the motorcycle rider is often compelled to maintain is one of the chief sources of weariness and riders will gratefully appreciate the motorcycle grip illustrated herewith. Made with an inner lining throughout of fabric, it is especially tough and strong, and cannot break off at the end of the bar. This has been a frequent source of trouble with the present form of construction, the grips breaking and separating. Even the relief part of the grip, which is not supported by the bar and is subject to severe strain, has been strengthened in the grip illustrated by building up with several

thicknesses of fabric, making it impossible for the end of the bar to cut through the rubber, which frequently happened heretofore.

Made of rubber that is soft and resilient, it is much more comfortable than the hard rubber grip, while its grooved form, which ensures a good hold, also permits a circulation of air by which



IMPROVED MOTORCYCLE GRIP

the hands are kept cool and comfortable. [Continental Rubber Works Erie, Pennsylvania.]

RUBBER IN A SELF-FILLING FOUNTAIN PEN.

ONE of the obstacles to the even more wide-spread adoption of the already extensively used fountain pen, has been the "muss" and trouble of the ordinary filling process. In Conklin's self-filling fountain pen, this trouble is dispensed with. The ink is contained in a reservoir made of the best quality rubber, guaranteed not to become hard or crack and to remain unaffected by acids. By compressing this reservoir, effected by an ingenious device known as the "Crescent filler," immersing the point in the ink and releasing the filler, the ink reservoir in expanding fills and the pen is ready for use. Cleaning is effected in the same simple manner, the point being plunged into clean water. There is no trouble about the proceeding, which is perfectly cleanly and quickly effected, and the life of the reservoir is about five years, the makers guaranteeing it for this period. In the accompanying illustrations, sectional views show how the reservoir is compressed by pressing the filler, also the simple construction of the device. The pen is made in various styles, the filler interfering neither with the appearance nor convenient use of the pen. [The Conklin Pen Mfg. Co., Toledo, Ohio.]



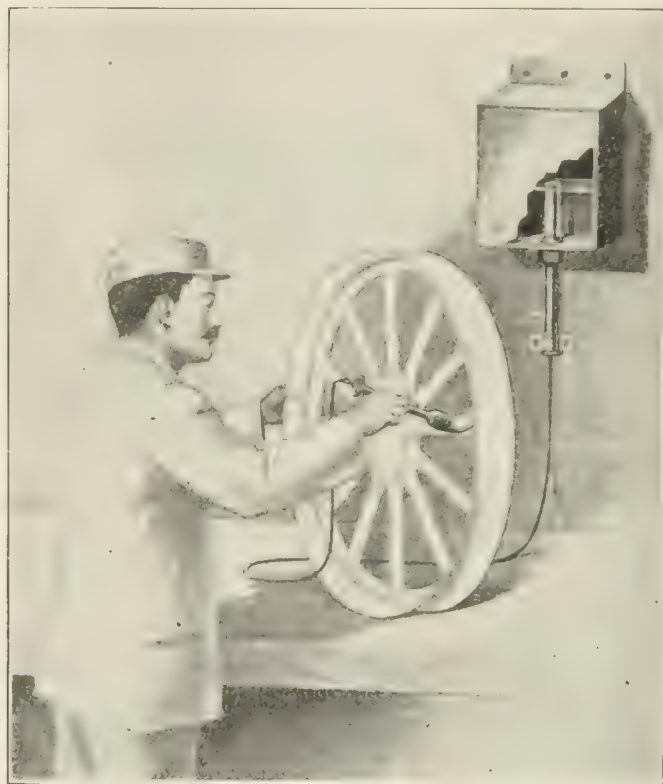
RUBBER TO PROMOTE REPOSE.

BECAUSE the worthy citizens of Brookline, Mass., desire to prolong their matutinal slumbers undisturbed, it is proposed, according to a Massachusetts paper, that the milkmen in that city be compelled to equip the wheels of their wagons with rubber tires and their shoes with rubber heels. The early morning approach to the homes of the somnolent Brooklineites, of the dispensers of the lacteal fluid, would thus be rendered less noisy and the customers relieved of the interruption of their Morphean indulgence.

Long staple Egyptian cotton was imported into the United States in seven recent months to the amount approximately of 60,000,000 pounds, valued at \$16,000,000. Efforts are to be made to cultivate this variety in the Colorado River region.

PAINTING THROUGH TUBING

LONG ago whitewashing was done by an atomizer and through rubber hose. A movement toward more artistic work is the new Standard Automatic Painting System that besides a hollow-han-



STANDARD AUTOMATIC PAINTING SYSTEM.

dled aluminum brush and a paint tank uses lengths of tubing for conducting the paint. [The Standard Automatic Mfg. Co., New York.]

RUBBER PROTECTED WEEDLESS FISH HOOK.

Some of the most highly prized of America's game fish give the angler much trouble on account of their disposition to seek weedy spots when feeding or after being hooked. The annoyance of finding the hook clogged with weeds while trolling, just when a "strike" is to be expected, will likewise be acknowledged by every fisherman. The hook illustrated herewith, while designed primarily for casting with a "porker," can be used



with equally good results with any other bait and is guaranteed to work weedless in any water. A wire spring is soldered on the hook-shank, over this is placed a rubber protector which guards the hook point on all sides from weeds. When a fish strikes, he forces this protection down to the hook shank and as soon as he is hooked, the rubber springs back into place, and the captive cannot get loose. The illustration, which shows the "porker" ready for business, will explain itself; a weight, seen under the rubber protector, keeping the hook upright in the water. [The Fisherman Co., Detroit, Mich.]

OLIVAUTO CLOTH.

ONE of the newest materials for the out-of-door man is called "Olivauto Cloth." It is of pure Australian wool, woven so as to be dustproof and of a color that will not show wear of any sort. It is moreover absolutely coldproof and sheds water.

A PUNCTURE-PROOF TIRE.

SOME years ago Cassimer Zeglen invented a bullet-proof fabric that would successfully turn a .38 calibre bullet, the projectile being flattened, without injury to the fabric. It was a close weave of pure silk, but the adoption by the various countries of high-powered arms, with their extraordinary penetrating power, led the inventor to abandon the bullet-proof fabric field and turn his attention to the utilization of his invention in the manufacture of puncture-proof tires, burst-proof hose, and other specialties.

In its employment for tires, the *modus operandi* differs but little from the methods at present in use. The Reglen fabric, which forms the basis of the tires, is passed between calender rolls, in connection with properly prepared rubber, which, by this means, is forced into all interstices of the fabric. Upon the surface thus prepared, the outer rubber covering, or tread, is vulcanized, the result being a substantial, compact casing, lacking nothing in resiliency and guaranteed to be non-puncturable.

The tests to which tires thus constructed have been subjected, as described by the manufacturers, would appear to substantiate the latter claim. Several hundred nails of different kinds—cut nails, wire nails, spikes, thick and thin, and all filed to sharp points—are driven through a heavy plank, so as to project from one-half to two or more inches in all directions. Over these projecting points a fully loaded automobile equipped with the puncture-proof tires, is driven up and down, at varying speeds, the nails perforating the rubber but failing to penetrate the fabric. Broken bottles, angle irons, horse-shoes with nails in them, and other things that automobilists encounter on the roads to their great discomfort, are also run upon, without puncturing the tire; experiments such as are above described having been made many times and invariably with the same results.

It is proposed to weave the material in circular form, for the manufacture of fire hose, which it is claimed would never burst, and its use for the manufacture of air, steam and brake-hose, etc., is likewise suggested. The American Rubber and Fabric Co., Philadelphia, Pennsylvania, are the manufacturers of goods under the Zeglen bullet-proof fabric patents and are making arrangements to exploit the invention in various practical forms.

MOTOR TRUCKS AND GOOD TIRES.

THE United States Army officials have for some time had under consideration the employment in the military transportation service, of motor trucks, especially for long hauls, that have to be quickly made. As a result of their investigations, the successful employment of motor trucks, in connection with recent military operations, may be quoted and the outcome has thus far proved eminently satisfactory.

The manufacturers of the Saurer Motor Trucks have recently undertaken a unique test that may prove fruitful of information, not only for the army transport officials, but for all who are interested in carrying heavy loads over long distances.

With a five-ton vehicle they recently started a trip from Denver to San Francisco, the truck carrying a load of three to four tons. The return trip will be made by way of Salt Lake City, Cheyenne, Omaha, Chicago, New York and back to Chicago.

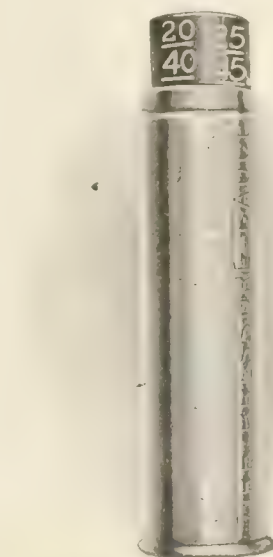
Bearing in mind the vast importance as a factor in the success of such a journey of the quality of the tires, it is interesting to note that the truck is equipped with wireless tires, made by the B. F. Goodrich Co., Akron, O., the single pattern being used on the front and twin tires on the rear wheels.

THE UNIVERSAL TIRE PRESSURE GAUGE.

AUTOMOBILE tire manufacturers unite in emphasizing the importance of proper inflation of tires, as the surest means of preventing tire troubles and prolonging tire life to the maximum. In most instances they issue a schedule of pressures to

be maintained in tires of different sizes under varying loads, if the best results are to be ensured.

Empirical methods of determining air pressure in tires, have long since given way to an exact system, and here a tire pressure gauge is needed. Such a device, the Schrader Universal Tire Pressure Gauge, we illustrate. Applied to the end of the valve, after the removal of the dust cap, it records the pressure of air in the tire and remains at the reading until returned to zero. This, and the fact that it can be used with



UNIVERSAL TIRE PRESSURE GAUGE.

the valve in any position, will appeal to the motorist, and it is sold under the guarantee of the makers, who are old-time experts in this line, as to



TIRE PRESSURE GAUGE IN USE.

its material and workmanship. [A. Schrader's Sons, Inc., New York, N. Y.]

RECORD EXPORT OF AUTOMOBILES.

A SPECIAL report from the Department of Commerce and Labor records the fact that the total increase of exports during the fiscal year ending June 30, 1911, as compared with 1910, was \$304,000,000, being a larger gain than in any previous single year. The last five years of our exports would thus show (in millions of dollars):

Year.	
1907	\$1,881,000,000
1908	1,861,000,000
1909	1,663,000,000
1910	1,745,000,000
1911	2,049,000,000

For the first time, the two-billion mark has thus been passed.

In this last increase, farmers and manufacturers have shared about equally, this fact being of a nature to encourage American national industries. Automobiles and parts are said to be three millions of dollars ahead of last year, as 1910 showed exports of eleven million dollars. The latest return represents a gain of more than 25 per cent., decidedly an encouraging result.

ABUSES IN THE RUBBER TRADE — A PLEA FOR CONCERTED ACTION.*

THE propriety of certain trade customs is bound to be largely a matter of individual opinion, and such opinion is formed in great measure by commercial environment. The fact is generally recognized that the commercial characteristics of the various sections of our country have all the local color of habit and association. In like manner, the opinions and consequent methods of the individual manufacturer or dealer must differ by reason of association, habit and policy. Certain customs, which may appear to some as unfair and unbusiness-like, will appeal to others as being necessary and, therefore, legitimate. Such differences of opinion exist only on matters of minor importance, and on all vital questions of general policy the rubber trade at large are in perfect accord.

This article deals only with trade abuses that are serious in their nature and general in their application. Nor is there reference to the many difficulties with which the trade, as a whole, is obliged to contend, except insofar as they may relate to the manufacturer in his dealings with the various distributing factors.

Further, there is no trade custom which works hardship to the manufacturer but what will affect the general interests of the dealer.

First, as to existing price lists, many of these are utterly inconsistent. It is impossible for a manufacturer to so arrange his discounts upon the basis of many of them as to remain fair with himself, and at the same time fair with purchasers. It is impossible to say how long certain of these lists have been in force, and, perhaps, at the time of their adoption they were proper and consistent. Today many of them have no legitimate excuse for existence in their present form. Such revision of these lists should be instituted as will bring them into conformity with modern conditions.

There is little stability in the matter of terms upon which goods are sold, and they are apt to vary essentially to suit the demands of the individual buyer. I find in some instances, and more especially in certain sections of the country, stocks of goods are delivered to a prospective customer's warerooms, with the understanding that he assumes no definite responsibility except for their custody, and that they are not to be paid for except as they may be sold. This is what is called "consigning" goods. While oftentimes many decline to put their goods out upon these terms, yet, on the other hand, datings are given and payments arranged which indicate a willingness on the part of the manufacturer to assume the functions of a banker. The interests of the rubber industry suffer from this attempt to combine the manufacturing and banking features of commerce. In the conduct of this combination policy there is, however, this essential difference between the methods of the manufacturer and the methods of the banker, in that, in direct contradiction to approved banking methods, the manufacturer is apt to extend the largest and longest credit where the risk is greatest. Concerted effort upon the part of the manufacturers is the best method to establish propriety and uniformity in the matter of terms.

It is to be deplored that the guarantees placed upon the product oftentimes put a premium upon misrepresentation.

The matter of a time guarantee is essentially an evil. There is no legitimate reason for it. Replacement should be made only when goods prove defective in material, construction or workmanship, and not because they have given out through improper use, carelessness or abuse, within a given period of time. There is no propriety in a manufacturer replacing at the end of

a season a piece of suction hose because some one has seen fit to drive a wagon over it, a pair of boots that have failed through abuse, a piece of thresher belt because some one has attempted to keep it in line by running it against a stick driven in the ground, a tire that has been maltreated in every possible way. There certainly appears to be great opportunity for proper regulation in this matter of the terms of guarantees.

It is also a fact that in many cases a manufacturer is not only burdened with the detail and expense, but also suffers the loss of his identity, through the insistence of the dealer in having goods furnished under private brands. This is not only a nuisance and an expense to the manufacturer, but it is bad for the dealer, because of added expense and delay in shipment, and because it is also an incentive to the lowering of standards. Some concerted effort should be made to control this feature of the industry.

There seems to be a tendency among many people, who have just sufficient knowledge of rubber goods to make it a dangerous thing, to supply their own specifications, and then expect the manufacturer to guarantee the product made in accordance therewith. This is something which should be discouraged by the industry as a whole.

There is a tendency upon the part of some to insist upon making contracts which are binding upon the manufacturer, but which impose little or no obligation upon the buyer. The trade suffers from what are known as "blanket" orders, in which, upon analysis, are found none of the essentials of legitimate commercial transactions. They are simply a call which the manufacturer gives the dealer upon his verbal assurance of the purchase of an indefinite quality of goods which the dealer may or may not elect to take.

There is no reason why the matters of quality, material, delivery, terms and prices should not be set forth in a contract. It is essential for a manufacturer to know the condition of his orders, and to protect himself by purchases applying on his contracts, particularly at this time, owing to the most unfortunate speculative character of the bulk of our purchases. This matter of indefinite and uncertain sales is among the greatest of the trade abuses, with which rubber manufacturers are not obliged, but choose to contend. The best way for the industry to protect itself from this evil is by unanimous action.

Among the greatest temptations which a manufacturer has to withstand is that of making goods to meet a price which has no other reason for its establishment than may exist in the desire of the buyer. The manufacturer is told that he may meet this price or not as he chooses; if he does not, there are others who are anxious to, and that his sales representative is the particular one selected for the bestowal of this favor, because he is such a good fellow. Over ninety per cent. of the just complaints on rubber goods and the consequent damage to the reputation of the industry, as a whole, are upon articles that lack the essential qualities of service and durability, because the manufacturer could not afford to put the right quality of material and workmanship in them at the price which the buyer elected to establish. There is nothing that will prove more disastrous to the interests of this industry than the manufacture of inferior goods. The temptation is always there, and unless some organized and concerted effort is made to control this feature, the whole industry is bound to suffer from it in time to come. It will be well to remember that it will not only suffer the direct loss of money wasted in replacements, but what is of greater importance, will lose a large volume of business which will go to other lines to be used in substitution for rubber goods.

There are many other improprieties, but the removal of the above would be a long step in advance. It is perfectly obvious that inequalities in price lists are a handicap to the dealer and the consumer, as well as to the manufacturer; that improper terms not only work injury to the manufacturer, but much harm to those consumers and dealers who purchase their goods upon a

*This article was prepared by a successful rubber manufacturer, whose study of the economic conditions of his trade has been most exhaustive. At the present time, new plans for the winter campaign are being formulated on a most timely basis.

legitimate basis of payment. It is apparent that unjustifiable replacements work serious injury to those dealers and consumers who are fair in their methods and reasonable in their demands. It is also plain that the buyer who is willing to make straightforward and proper contracts is relatively at a great disadvantage in comparison with his competitor who succeeds in entering into agreements which entail no obligation upon his part. The time has come when some organized and concerted effort should be made to protect and advance the welfare of this industry. This is not to advocate any measure in the interest of a private business or for the purpose of advancing the material welfare of any factor, be it manufacturing or distributing, which will work hardship or injury upon another factor of the industry. The interests of private business are absolutely dependent upon the condition of the industry. The manufacturer's, distributor's and consumer's interests are absolutely identical. Possibilities for service, utility, progress and profit have no proper and economic existence because trade custom invites one factor or individual to take advantage of the other.

There is no commercial transaction which is proper unless it embraces mutual gain and mutual advantage. The fact that the consumer has bought an inferior piece of goods, that a jobber has caused positive embarrassment and possible loss to the manufacturer by reason of the uncertainty of his contract; that a manufacturer has, by injudicious credit, established an irresponsible distributing factor, does not mean gain, but, on the contrary, it means a net loss to the industry, as a whole. This is not to suggest or urge the introduction of any changes in trade customs which are likely to make one branch of the industry prosper at the expense of another, or that will impede progress, either general or individual, or that will discourage enterprise, but, on the contrary, it is to advocate the introduction of such general methods, policies and customs as will insure not only to each individual enterprise, but to each class of trade the opportunity for more rapid and better development and growth. It is to advocate increased opportunities for the use of capital in the particular function upon which economic existence is based, and more equitable treatment which should be based upon justice and fairness and not upon exaggerated demands.

RUBBER GATHERING IN PENNSYLVANIA AND IN CANADA.

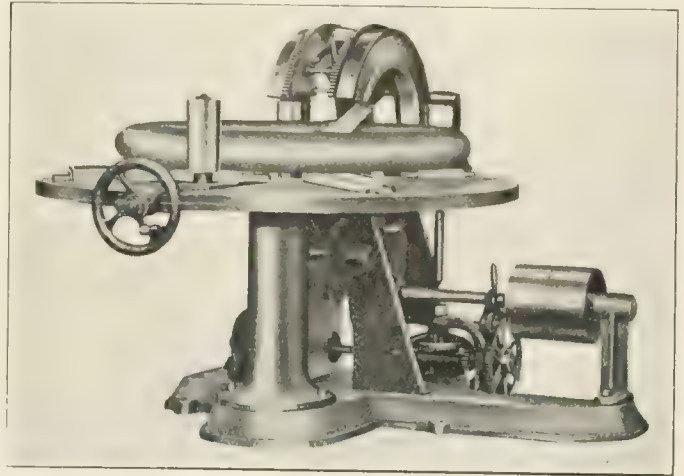
AN ESTEEMED daily contemporary, hot after news, has made two discoveries of vital importance—one that the inhabitants of Hyde Park, Pa., have from time immemorial, been accustomed to leave their rubbers on the porch, and the other, that on a recent night some unthinkable miscreant swept through the town and cleaned every porch of its consignment of sandals and "storms," leaving the citizen the next day to wallow about with wet feet and heavy hearts.

One's first thought on hearing of this new addition to the annals of crime, is that it served those people right for placing so little value on the humble, but indispensable galosh. One's second thought is, "Did it really net the looter or looters (for the thing was probably syndicated) enough to pay for all their trouble and hard work?" Hyde Park is a small town and it is doubtful if a clean sweep of piazza rubbers footed up more than 200 pairs. Allowing a pound to a pair, and with old shoe scrap, at nine cents per pound, the gross returns would not exceed \$18—from which must be deducted cost of gathering, packing, shipping, commission on sales, and the necessary expense of maintaining harmonious relations with the local constabulary. It really could not have netted much for a hard night's work. If the four to five million New Yorkers should all conceive the idea of leaving their rubbers out on the front steps, that would be quite another matter.

A BOOK for everybody interested in tires—"Rubber Tires and All About Them"—this office.

FOR WRAPPING AUTO TIRES.

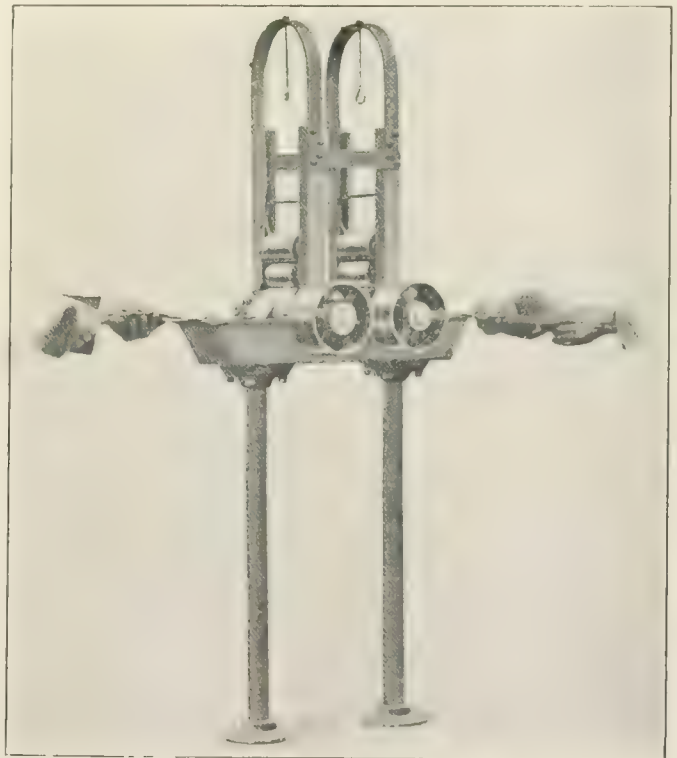
CLOTH-WRAPPED tires are the reason for the power wrapping machine here shown. Its points are as follows: It is able to wrap any size of tire up to 42 feet. Its spools hold



CLOTH WRAPPING MACHINE FOR AUTOMOBILE TIRES.

wrapper enough to finish a tire without re-threading. It gives even tension and in threading only one motion is necessary to put a full bobbin in place, and pass the wrapper about the tension bars.

In use the tire lies flat on the table, and the layer of wrapper may be reversed by simply reversing the shuttle drive. The machine is speedy; there is no straining or breaking and it weighs

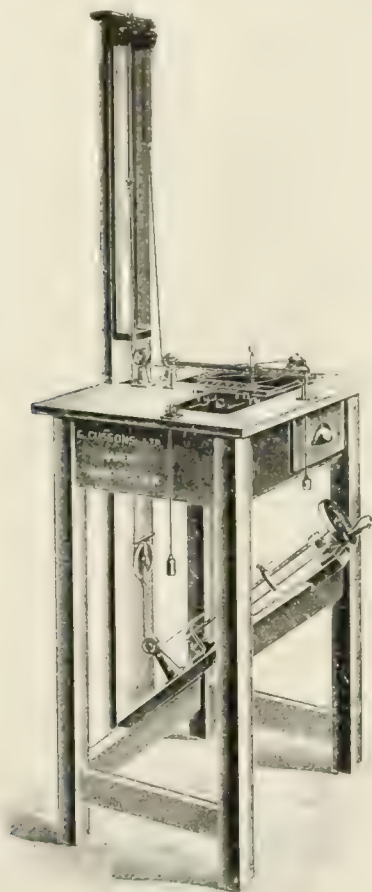


RAG WRAPPER.

about 1,600 pounds. An adjunct to it, a rag wrapper for filling the bobbins, weighs 150 pounds. [The Williams Foundry and Machine Company, Akron, Ohio.]

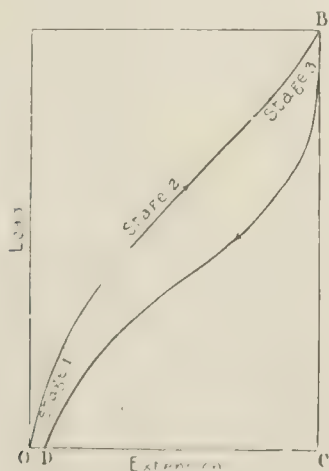
A RUBBER TESTING HYSTERESIS MACHINE.

This important little machine is the invention of Prof. Alfred Schwartz, a noted English professor of physics and electrical engineering. As seen in the illustration the machine shows the



RUBBER TESTING HYSTERESIS MACHINE.

effect of the extension of a piece of rubber by means of a load which is increased at a regular rate until either load of expansion is attained. When this has been done the load is diminished at a given rate, the rubber allowed to retract and the relation



between load and elongation is found to have been recorded automatically by a pen which draws two lines, one during extension and the other during retraction. It is exceedingly simple and any one familiar with testing machines can see at a glance its method of working.

What is known as the hysteresis loop is shown in the accom-

panying diagram. This, by the way, is drawn upon a sheet of paper attached to a moving table. The line O B is made during extension and is the result of the stretch of the rubber and of a calibrated spring. D B is the retraction curve. The outlines of the curve indicate the physical properties of the rubber sample and thus determine its qualities and insulating values. [Manufactured by G. Cussons, Limited, Broughton, Manchester, England.]

RUBBER LINES FOR FISHING.

TO THE EDITOR OF THE INDIA RUBBER WORLD:

SIR.—As you are doubtless aware Cape Cod fishermen use a long coiled spring of the best steel at one end of which the hook in cod fishing is attached. The cod is likely to be a trifle unruly when hooked, stretching the spring to its full tension. Tiring eventually and weakened by its struggles, the spring recovers, throwing the fish with violence from the water, frequently endangering the life of the fisherman, who naturally becomes an expert dodger. A land lubber at this sport is liable to black eyes and missing teeth, for when the "sacred cod" lands, he lands hard.

I have given the dangerous nature of this sport close attention in the last few weeks, and have evolved a remedy that will revolutionize the methods long employed in the capture of fish, and add a novelty to the rubber factory product; in short, a rubber fish line.

I took twenty-five feet red tubing, containing 40 per cent. "unrecovered fine Para" (see specifications for wire insulation for particulars) and attached thereto a hook in the usual manner. I also had the foresight to take the July issue of THE INDIA RUBBER WORLD, and thus equipped, proceeded to the lair of the cod. The day was hot and the bay calm, and the fishing being the reverse of exciting, I fell to reading. I must have fallen into a pool of deep thought, for I was aroused by the violent rocking of the boat. Whipping back and forth through the water went the rubber line, now here, now there, and gazing into the depths of the translucent ocean I saw an immense fish in a frenzy of wrath. He would dive far below and the inexorable, elastic line would lengthen out and out, from 25 feet to 75 feet (you will observe if you consult specifications that it must stretch four times its length without breaking), then tired with its labors, relax and be steadily drawn back, not violently, as with the spring contrivance referred to, but gently, inexorably, as is the nature of a high-grade Para product. Then resting, the fish made another wild rush for freedom until, finally, quivering in every fiber of its magnificent length, it floated slowly to the side of the boat and gasped, "What is this thing I've been pulling on for the last half hour?" "A rubber line," I replied, gravely. "Take me out—I thought it was an angle worm!"

JAMES W. CAREY.

Spider Lodge, Monument Point, Mass., July 4, 1911.

ELECTRICIANS' GLOVES AND BOOTS.

PROMINENT amongst the varied products of Harburg and Vienna India Rubber Co. is a line of special interest to electricians and electrical workers. The rubber gloves and boots made by this company, and guaranteed to withstand 20,000 volts, so efficiently protect the wearers that no shock is felt when actually holding live wires carrying high voltages.

A WISE PRECAUTION.

WOULD-BE CUSTOMER—I want a good supply of shock-absorbers—largest you've got.

Rubber Dealer—What machine do you want them for?

Customer—No machine; want them for myself. I'm going to Atlantic City.

ACCURATE TESTS OF TIRE EFFICIENCY.

IN order to accurately define any strain or burden, tests of uniform nature form an indispensable condition. These, to be of utility, should as far as possible reproduce the influences to which the objects tested are subject in actual use. The value of such tests is enhanced when the comparative effects of an identical cause is shown with reference to various forms of material.

The importance of this principle as to the resistance of tires for trucks, has been demonstrated by The Michelin Tire Company. Solid tires, they claim, do not seem to have given the results expected from them with commercial vehicles, there having been a double sacrifice of speed and lightness. An increase of 5 per cent. in weight, instead of reducing the wear, increases it, it is stated, by about 14 per cent. It is added, that while solid tires have certain advantages in the reduction of noise, they are hardly more satisfactory than ordinary iron tires in reducing vibration. If nothing can be gained in speed, horse traction, it is urged, becomes far more economical.

In the belief founded upon the above facts, that car manufacturers can get no satisfaction from solid tires, the Michelin company has refused to undertake their manufacture. This refusal was prompted by the results of numerous experiments, conducted for the special purpose of proving scientifically that solid rubber is incapable of allaying vibration. Out of fifty experiments made, typical results are quoted in respect to eight, two of these results being reproduced in Figs. 2 and 3.

A wheel (A fig. 1) loaded with a weight of half a ton, fitted first with a solid rubber tire 2.46 inches thick and then with a pneumatic tire, was set revolving at a speed of 16 miles an hour on a fly-wheel (B). The very broad rim of this fly-wheel was arranged to accommodate various objects which would

give it an uneven surface. The displacements of the hub of the wheel (A) were registered by a pen attachment, which traced the exact height of each rise and fall on a cylinder (C) revolving at uniform speed. In this way the fly-wheel exactly represented the uneven surface of a road, while the wheel (A) played the part of a car wheel. A first examination of the curves shows that in each instance the pen has traced the constant vibrations,

which in the case of the solid tire measure from 0.23 to 0.27 inch, even when no object has been placed on the fly-wheel, while they register only 0.02 inch with the air-filled tire. These tracings came entirely from the fly-wheel and give some idea of the work of solid as compared with air-filled tires.

RESULT WITH SOLID TIRE. (FIG. 2.)

Over a long half oval obstacle, 1.17 inches high, the solid tire raises the wheel 2.30 inches.

RESULT WITH PNEUMATIC TIRE.

(FIG. 3.)

Over a long half oval obstacle, 1.17 inches high, the pneumatic tire raises the wheel 0.44 inch.

These diagrams, it is added, indicate that the pneumatic tire absorbs the obstacle, the height to which the hub is raised being less than the height of the obstacle itself, while the solid rubber tire does not prevent the wheel from rising higher than the obstacle.

TWIN TIRES.

The natural advantages thus connected with pneumatic tires are accentuated by their use in the form of "Twin Tires," when two or sometimes three pneumatic tires are placed side by side on the same wheel; the pneumatic suspension thus afforded ensuring speed with comfort and increasing the weight-carrying power.

* * *

FIG. 1. DEVICE FOR REGISTERING VIBRATIONS OF TIRES.

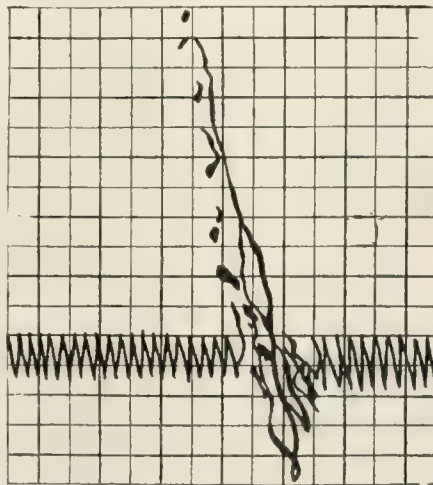
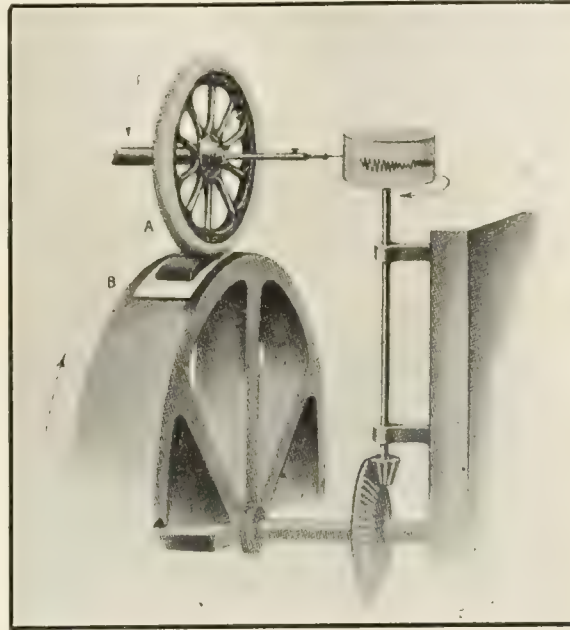


FIG. 2. RECORD OF VIBRATIONS OF SOLID TIRES.

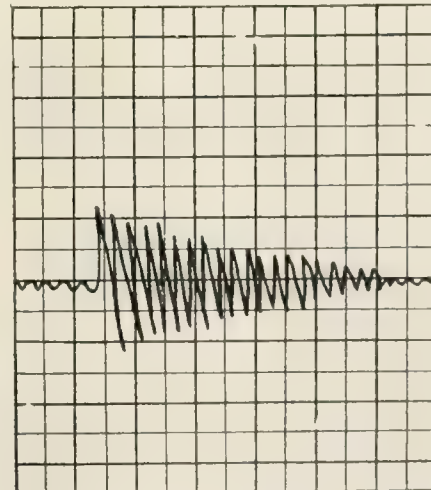


FIG. 3. RECORD OF VIBRATIONS OF PNEUMATIC TIRES.

In line with the above views, are the opinions of ex-Lieut. Joseph A. Webber, of the Boston Fire Department, in his paper read at the annual meeting of the New York State Fire Chiefs. He considered that the choice between solid and pneumatic tires for use on fire engines should be decided by the weight of the car, which

should be kept below 3,000 lbs. On such cars the dual system of pneumatic tires had proved very successful. Above the weight named either the dual pneumatic system should be used on the rear or else cushion or solid tires. This recommendation of single and double pneumatic tires specially applied to "first aid" cars, such tires being indispensable, at a speed exceeding 18 miles an hour; those in the rear being of dual character.

THE ENGLISH ARE SAID TO BE using air instead of hydraulic presses. In lieu of a ram a cylinder is made like a huge piece of suction hose of fabric and rubber-armored and collapsible, the pressure being secured by pumping air into this cylinder.

GARAGES, RUBBER AND REPAIRS.

ALMOST every garage, big and little, dips to a degree into the rubber business. For example, they are factors in the waste rubber field for they all advertise "Old Rubber Bought and Sold." But it is in repairing, however, that they really shine as rubber men. Just to size up the business, an INDIA RUBBER WORLD reporter recently visited several garages in and about New York to find out just what was being done.

The first was a tiny place, housing not more than fifteen cars. They, however, made 2,509 repairs last season. Of these 200 were shoes retreaded, 500 sections to repair blowouts, and the rest patching of inner tubes. They guaranteed certain tires where they warranted them to run 1,500 miles after repairing.

A big city garage figured that they did about 1,500 sections a year. For little jobs, such as repairing tubes, cutting down sizes, etc., they claimed that they averaged 50 a day in the busy season, and for the year did about 6,000. Both were equipped with vulcanizers, gas heated, and purchased their stock, cement, etc., from the tire manufacturers.

Talking with the repair men, the following points were deduced.

There are two principal causes for repairs, rim cuts and punctures. The first is brought about by a deflated tire, which may have been occasioned by a puncture or by carelessness in tightening the nipple after inflation, or by some defect in the inner tube or shoe developing while en route. A burst tire often dates back to a bruise on a sharp stone and develops by slow degrees. The bruise has strained the fabric, perhaps split it on the inner ply of the shoe or casing.

In repairing a rim cut a section one or two inches wide is removed, and if the duck plies are not seriously worn the fabric is coated with cement, a piece of unvulcanized gum adjusted to replace the part removed and the tire thus repaired is placed in the vulcanizer. Where the fabric is injured care is taken to remove every particle of dirt or sand. Some repairers cut out the worn duck and insert a new piece, others apply cement and make a surface repair. But frequently the injury is deep seated, the shoe being not only burst on the outside, but the duck, to the innermost ply, split longitudinally. Here the repairer gets in his expert work. For the length of the split, plus a couple of inches for working margin, the rubber surface of the shoe is removed. A section of the torn duck is then removed from the first outer ply. Then from the second ply a section is removed, say three-quarters of an inch smaller on all sides than the piece first removed, and so on through all the plies of duck of which the casing is made, giving in appearance a succession of steps, the innermost one corresponding in area to the size of the injured section, the area of each section removed increasing in the manner described. This method gives the patches a

margin that ensures secure attachment to the fabric of the tire.

The injured portions having been removed, the surfaces exposed are washed thoroughly with naphtha and coated with cement, then two plies of frictioned fabric are placed on the inner surface of the casing, and so adjusted as to cover the section to be repaired and have a margin for adhesion. The rebuilding of the plies now being fitted nicely to the space cut out for it, and "stitched" down along the edges with a hand roller, care being taken that no air remains between the plies. The last and largest of the duck patches having been applied, the whole is covered with new gum.

The ingenuity of the repairer is further shown at this stage of operation in his preparation of the ply of pure gum that is to supply a new wearing surface for the shoe. After removing the old tread, dove-tailed notches are made in the edges, and in the piece of new gum that is to complete the repair, notches that correspond in size and location. These are adjusted, the one to the other and form a stronger union than could be secured by the abutting of straight edges.

The section wound with strips of muslin is then placed in the vulcanizer, and in 30 minutes, more or less, the job is finished.

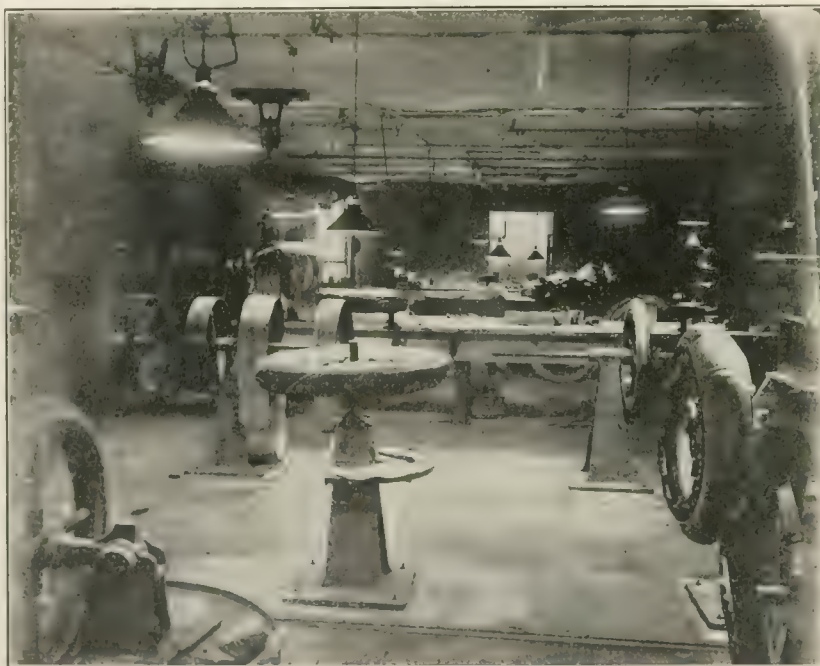
The repair of an inner tube is a comparatively simple matter, but it is a mistake to suppose that a surface patch is sufficient. It should be double; one on the inner surface of the tube, and one on the outside at the point of injury, the inside patch being considerably the larger of the two. The surfaces of the tube (inside and outside), are roughened by use of a buffing wheel or emery cloth, and, by use of naphtha, all "bloom" or dust removed. This creates a surface necessary to the proper adhesion of cement.

Workmanship comes in

here also, to make a patch that will be symmetrical as well as strong, and not a "knob" or lump, that by constant rubbing against the inner surface of the shoe will create in time another weak spot.

To attach a rivet studded leather tread the outer surface of the tire and the inner surface of the non-skidding strip are roughened, cleaned with naphtha and coated with cement, which is allowed to dry for a short interval. The strip is then slipped upon the shoe and the hand roller completes the work. Care should be taken to remove every trace of moisture. Wet weather is said to interfere in no small degree with the production of a satisfactory job.

WHERE the duty on a consignment of oil-resisting hose was recently assessed as "manufactures in chief value of metal," at 45 per cent. ad valorem, the importers protested, claiming a rate of 30 per cent. under the paragraph for flexible metal tubing or hose. The general appraiser sustained the higher rate on the ground that cotton-canvas hose, bound with wire, could not be included under the latter classification.



TYPICAL AUTOMOBILE REPAIR SHOP.

THE RUBBER TRADE AT AKRON.

BY A RESIDENT CORRESPONDENT

THE GOOD BLUE STREAKS.

A VERIFIABLE "blue streak" of success is recorded by the Goodyear Tire and Rubber Co. for their motorcycle tires in connection with July race meetings. At Brooklands track, Weymouth, England, Jake DeRosier, using Goodyear "Blue Streak" tires broke the world's record. He secured two out of three heats in the match race with C. R. Collier. At the race meet held July 22, under the auspices of the Akron Motorcycle Club at Akron, Dan Willis, of Canton, carried off five firsts and two seconds out of eight events. At the Indianapolis State Fair grounds, Baker won four firsts one day and three firsts the next, incidentally breaking two records. Every one of nine events at Fort Wayne, Ind., was won by machines having Goodyear tires. Anderson, at Elizabeth City, North Carolina, took all five open events on a machine similarly equipped. At Lima, Ohio, de Salvo took four firsts.

THE PORTAGE RUBBER CO.

E. A. Kinsman, formerly with The Diamond Rubber Co., has been secured as foreman of their mill room.

This company has just declared a quarterly dividend of $1\frac{3}{4}$ per cent. They were enabled to do this through the earnings of The United Rubber Co.'s reclaiming plant at Barberton, which they purchased last Fall.



THE PORTAGE RUBBER CO., BARBERTON, OHIO.

The Portage Rubber Co., of Barberton, commenced operations July 25. Tires and mechanical goods are manufactured. The company has a floor space of 42,000 square feet, well equipped with rubber machinery. Two new designs of solid tires have been developed by the company's experts. They also recently obtained a patent on a new process of reclaiming rubber upon which they have been experimenting for some time.

DIAMOND RUBBER CO.—DIVIDEND.

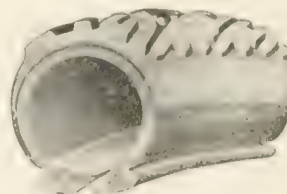
THE Diamond Rubber Co., Akron, Ohio, on July 20, declared a regular quarterly dividend on the common stock of $3\frac{1}{2}$ per cent.

SWINEHART TIRE AND RUBBER CO.—INCREASE OF CAPITAL.

The Swinehart Tire and Rubber Co., at a meeting of the stockholders, passed a resolution for an increase of the capital stock from \$400,000 to \$800,000. The company expects to place \$250,000 worth of stock on the market at once, and to retain \$150,000 worth of stock in the treasury. M. W. Wuchter, superintendent, says that the company also expects to employ 100 more men within the next few weeks, and increase that number from time to time when improvements which were discussed at the last meeting of the stockholders are finished. The company has been working night and day during the past season and claims that it has been unable to cope with the increased volume of business.

FIRESTONE TIRE & RUBBER CO.

THE Firestone Tire & Rubber Co. has greatly increased their office force since moving into their new building. They have also secured property and expect to erect a building at the corner of Conklin and Locust streets, St. Louis, Mo., which they will occupy with a factory branch in the near future, and have



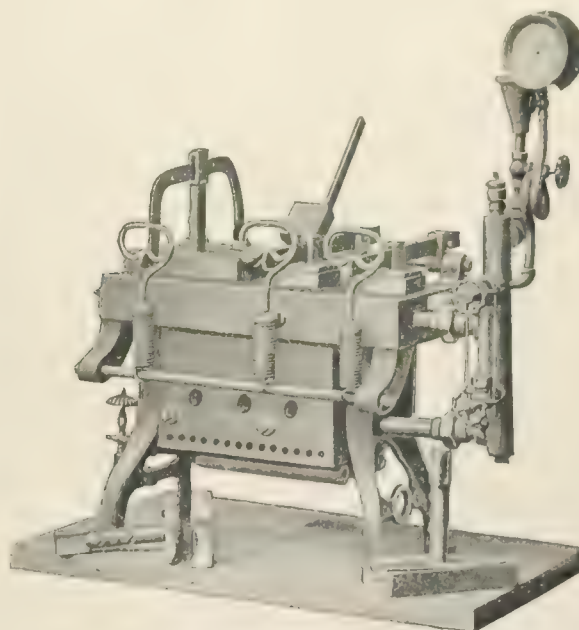
FIRESTONE'S NEW TIRE TREAD.

closed a lease for the premises at 724 Main street, Buffalo, N. Y., to be used for the same purpose. This branch will be in charge of R. W. Ingersoll.

Mr. Firestone says, "That motor racing is the severest test a tire can have, as it is a scientific fact that high speed shows up the strength or weakness of a tire."

WILLIAMS FOUNDRY AND MACHINE CO.

FOR the repair of inner tubes and minor repairs to casings, The Williams Foundry and Machine Co. are about to place on the market an inner tube vulcanizer, 8x20 inches, with three pressure bars, an efficient steam generator, which is fitted with



NEW TIRE VULCANIZER.

burners for gas or gasoline, complete with steam gauge, safety valve, water gauge and filling funnel. A set of three blocks with inner cores to cure small casings is provided to be used with it.

The same company has invented a new clasp-type, boltless vulcanizer head. The following are some advantages claimed for this head

(a) Time Saving.—No bolts to handle in locking or sealing the head. When closed it is instantly sealed by opening a valve.

(b) Ease of Operation.—The door of vulcanizers, 36 inches in diameter and smaller, may be counter-weighted and operated

hand. The larger doors are easily handled by a chain block or power hoist.

Safety.—When closed the cast steel door and shell rings are encircled by a steel locking ring, the two halves of which are securely clamped together when in the closed position.

Factory reports say that 1911 will probably be the biggest year in the history of the Akron rubber business. The business last month has surpassed the same month in 1910 by a large margin.

* * *

Outside capital has been looking for a location for another rubber plant in Akron. The parties interested in this enterprise are Eastern people.

The rush of business of the various companies in Akron engaged in the tire manufacturing business has been enormous. Practically all are running night shifts and many orders are turned down. The Firestone Tire and Rubber Co. intended to use their old plant for a rim factory, but if the present stress of trade continues, they will be compelled to use both plants for a tire factory and for the present at least have most of their rims manufactured out of town.

The Miller Tire and Rubber Co. has gone to considerable expense in developing another new tire. This is about ready to be placed on the market.

John Gammeter, head of The B. F. Goodrich Co.'s experimental department and an inventor who has been very successful in developing new machines for the manufacture of rubber goods, has purchased an aeroplane, and is experimenting with the same. If he is as successful in developing this machine as he has been in the past, we may in the future look for some valuable improvements made by him to aid aerial navigation.

THE RUBBER TRADE IN SAN FRANCISCO.

(By a Resident Correspondent.)

WHILE there has been a general improvement all around over the business done last year at this time, it is still true that conditions are quiet, and that the amount of business would have to be considerably greater before the rubber merchants could call it prosperous. The business that is being done now is of a substantial quality and the fact that there has been steady improvement is most auspicious. There is no doubt in the minds of any of the merchants but that the tendency is towards better business right along, and that the fall will probably see a very active trade. Commercially San Francisco is showing a healthy growth and all of the dealers are optimistic of the future.

* * *

Edward Helm, who had the management of the Gorham-Revere Rubber Company's branch store in Los Angeles, died from injuries received in a recent automobile accident while riding in that city. His loss is a sad blow to his innumerable friends.

* * *

R. J. Hand, vice president of the Crandley Rubber and Supply Co., has sold out his interest in the firm, and is now with The B. F. Goodrich Co. in San Francisco.

* * *

The local branch of the Pennsylvania Rubber Co. has remodeled its offices and salesrooms at Nos. 512-514 Mission street, so that they can now make as attractive a showing as any other tire and rubber house in the city. The old and unattractive freight elevator just inside the front entrance has been removed and two new freight elevators have been installed, one in the building and one on the sidewalk, as a sidewalk elevator to the basement, both of which greatly improve the shipping facilities. The accounting department has been removed from the top floor to the second, and the salesrooms and private offices have been

placed in the front of the main floor. On the main floor the fixtures are all new and modern, and the offices present an unusually attractive appearance. Here J. E. French, the Pacific Coast manager, and his assistant G. J. Brooks have their offices. On this floor a special display is made of the vacuum cup tires, and in the basement a large display is now being made of the Pennsylvania Velvet Tread automobile tires.

* * *

A. H. Gregory, manager on this coast of the New York Belting and Packing Co. has now been nearly a month in Alaska, and will continue his trip through that territory returning about the first of October. He is making a sort of a missionary tour to investigate the possibilities of the entire section, take in all the big dredgers, and attend to whatever business he finds. This firm reports an excellent business for June, and a slight falling off in July, with prospects bright for excellent business in the future.

* * *

Mr. Miller with The B. F. Goodrich company has returned from a very successful trip to Honolulu in the interests of the firm's tire department.

* * *

Mr. Hirsch, traveling representative of the Pennsylvania Rubber Co., is now making a trip through the northwestern territory.

* * *

The Bowers Rubber Works is putting up a new building which will be used exclusively for the manufacture of matting and hose.

* * *

A. W. Savage, of Monrovia, California, has invented a new automobile tire which he intends to market through a new corporation just organized to handle the same. He claims the tire to be puncture proof and one that cannot blow out.

* * *

Herman Fischer, a rubber merchant from Hamburg, has been a recent visitor in this city, stopping at the Palace Hotel.

* * *

The annual picnic was given June 26 by the association of rubber tire dealers of San Francisco at Palo Alto, California. It was attended by the families of nearly all the merchants and was enjoyed by all. There were games, baseball, a tug-of-war, boxing, etc. Among the men most active in the management of the picnic were C. M. Cummings, of the Michelin Tire Co., and A. C. Leonard, manager of the western branch of the Goodyear Tire and Rubber Co.

* * *

F. O. Nelson, manager of the Los Angeles branch of The Diamond Rubber Co., has returned to that city after a vacation trip to San Francisco by automobile accompanied by his wife.

* * *

Joseph Weston, coast manager for the United States Tire Co., returned recently from his business trip to Los Angeles, where he reports he found business to be in a very favorable condition.

* * *

The B. F. Goodrich Co., has been giving complimentary moving picture displays and lectures regarding the rubber industry in the Valencia Theatre. The lectures are given by F. M. Tillisch.

* * *

The Goodyear Rubber Company is now operating two new auto trucks, one a delivery truck and the other for freight. This firm will have its new calender and mill in operation at the factory by the first of the month.

* * *

The American Rubber Manufacturing Co. has purchased the bulk of the machinery from the factory of the defunct Barton Packing and Rubber Co., including the presses, calender, etc. The remainder of the machinery was taken by the Plant Rubber and Supply Co.

News of the American Rubber Trade.

STANDARD WOVEN FABRIC CO.—A NEW CORPORATION.

The Standard Woven Fabric Co., Worcester, Mass., organized in March last, with a capital of \$400,000, and of which George D. Moore is president, A. H. Burdick, treasurer, and T. J. Daley, clerk and secretary, has taken over the business of the Multiple Woven Hose & Rubber Co., of that city. The latter company, founded in 1904 by George D. Moore, established a flourishing business as manufacturers of woven hose and woven belting and of the "Multibestos" brake lining, a friction fabric largely used as a lining for automobile friction brakes, and the brake bands of hoisting, cable-winding and similar machinery. Under the new company it is proposed to considerably extend the manufacturing facilities and provide for the increased output which the growing business demands.

THE BOSTON BELTING CO.'S OLD AND NEW FACTORIES.

Away back in 1828, before the discovery of vulcanization by Goodyear, there was a three-story building belonging to the Roxbury Rubber Works that later become historic. The building still exists in good repair and is part of the present plant of the Boston Belting Co. In the accompanying illustration it shows in the middle of the picture, distinguished by being lighter colored than the rest. At the extreme right in contrast to the pioneer factory is the latest addition to the company's plant, a fine modern "mill construction" edifice.



Factories of Boston Belting Company, Boston, Mass.

SOME NEWS OF THE UNITED STATES RUBBER CO.

The recent interpretation of the anti-trust law by the Supreme Court of the United States, and its effect upon the Standard Oil Company, has given rise to many rumors. There was, for example, a rumor that the United States Rubber Company was planning to re-organize. President Samuel P. Colt was therefore at once interviewed. He said:

"There is absolutely nothing to warrant any such impression. We do not know of anything that we have to reorganize. In every respect, we are conducting our affairs within the law, as interpreted by the Standard Oil and American Tobacco cases."

In another interview given to the *Wall Street Journal* (New York) Colonel Colt said:

"Our output of mechanical goods for the last two months has been about 25 per cent. below the corresponding months last year. Boot and shoe sales are also much below 1910, and we find very little desire to purchase by the jobbers. Our plants at present are working only about 60 per cent. of capacity.

"If business conditions in the fall show improvement I expect to see a betterment in the demand for rubber goods. Retailers, I find, are not anxious to purchase, although I do not believe that they had any great quantity of goods left over from last year. A year ago they showed the same feeling as now in

regard to buying and for that reason no large stocks were held over. If better weather conditions prevail in the fall I expect to see business improve.

"According to present indications it is possible that our usual summer shutdown will be of longer duration than has been customary of recent years. We usually shut down our plants during the month of August, but this summer we may also close during the latter part of July. Our summer shut-down is partially necessitated because the crude material is sticky during that time and difficult to work with.

"All of our tire plants are working at capacity. We have also opened our Providence plant which formerly turned out the Continental tires and which has been shut down for some time. I find that the demand for tires is steadily increasing as the season progresses and do not believe early estimates of a pessimistic nature will be realized."

"The automobile industry," Colonel Colt continued, "I believe to be still in its infancy and I expect to see a steadily increasing demand over the next few years. I do not believe that we can even attempt to estimate the output of cars of all classes ten years from now. Naturally the greatest increase will be in the commercial cars, but I expect that there will be a steady increase in all classes."

A FLOURISHING BUSINESS.

HARMER Rubber Reclaiming Works, East Millstone, N. J., are distributing to the trade a blotting stone with a photograph of their works—a souvenir of their first anniversary. The company has made very satisfactory progress during the first year of their career. In addition to a full line of mechanical reclaimed rubber, they have just completed the installation of new machinery for reclaiming boots and shoes and auto tires on a large scale. The officers of the company are: Thomas W. Harmer, president and general manager; I. Laurie, vice-president; A. Marcus, secretary and treasurer.

B. & R. RUBBER COMPANY INCREASE CAPITAL.

By the issue of 1,000 shares of preferred stock, at a par value of \$100 per share, the B. & R. Rubber Co., North Brookfield, Mass., has increased its capital stock from \$400,000 to \$500,000. The increase in capital will be utilized for additional equipment and for an addition to the present mill room, the added facilities being warranted by a growth of the company's business this year, as compared with 1910, of about 22 per cent.

CONTINENTAL HOSPITALITY.

On their way to the recent meeting of the Federation of American Motorcyclists, held in Buffalo, N. Y., the delegation from Cleveland, Ohio, and vicinity, upwards of a hundred in number, were entertained at lunch by the Continental Rubber Co., Erie, Pa., a large tent having been erected for the purpose.

RUBBER GOODS AND TRADING STAMPS

The Green Trading Stamp has at last invaded the rubber business. According to Sperry & Hutchinson's "List of Tokens" certain companies give with purchases of their goods "Hamilton Bonds and Coupons." These in turn are exchanged for Green Trading Stamps. The list as far as the rubber trade goes is:

Canfield Dress Shields, 1 stamp for 2 coupons.

Omo Dress Shield, 1 stamp for 2 coupons.

Great American Standard Chewing Gum, 1 stamp for 12 wrappers.

Badger's Rubber Heels, 1 stamp for 1 ten-cent Hamilton Coupon.

Now that the thin edge of the wedge has entered it will not be long before buyers of elevator belting, deckel straps and suction hose will be carrying stamp books.

WALPOLE RUBBER CO.—DIVIDEND.

The Walpole Rubber Company, Walpole, Mass., have recently declared the regular quarterly dividend of $1\frac{3}{4}$ per cent. on their preferred and 1 per cent. on their common stock.

UNITED STATES RUBBER COMPANY—DIVIDEND.

The United States Rubber Co., New York, declared on July 6, regular quarterly dividends of 2 per cent. on the first preferred and $1\frac{1}{2}$ per cent. on the second preferred stocks.

CANADIAN CONSOLIDATED RUBBER CO., LIMITED—DIVIDEND.

The regular dividends of $1\frac{3}{4}$ per cent. on the preferred and 1 per cent. on the common stock of the above company were paid July 3.

NEW SOUTH BEND (IND.) RUBBER FACTORY.

The South Bend Tire and Rubber Co., of South Bend, Indianapolis, recently financed by Akron and Mansfield men, claim that they will employ from 200 to 300 men at the start. The directors of this company are: President, William Blecker, Akron; vice president, W. A. Bently, Mansfield, secretary, M. V. Bently, Mansfield.

VACATION NOTES.

Colonel Samuel P. Colt, president of the United States Rubber Co., is passing the greater part of the summer at his home in Bristol, Rhode Island, with occasional motor trips to interesting points around New England.

James B. Ford, vice-president and treasurer of the United States Rubber Co., will join the August cruise of the New York Yacht Club in his yacht "Katrina."

J. Howard Ford is passing the summer at his farm at Stony Ford, in Orange county, New York. It is said to be one of the handsomest places in the state.

H. B. Hubbard, auditor of the United States Rubber Co., is an enthusiastic motorist. He left New York on July 26 for a two weeks' tour of New England in his car.

John D. Carberry, assistant secretary of the United States Rubber Co., who has been badly troubled with rheumatism for the last two months, is on his farm at Orwell, Vt., and reports that his health is greatly improved.

H. E. Sawyer, general manager of the United States Rubber Co., is passing the summer at Hotel Mt. Washington, at Bretton Woods. He expects to remain till Labor Day with occasional flying trips to New York.

Edward R. Rice, sales agent of the United States Rubber Co., is at Kennebunk, Maine, until September.

John P. Lyons, advertising manager of United States Rubber Co., spent his vacation at Bloomfield, New Jersey.

Wm. M. Morse, of the Boston-Panama Co., is here for a month's vacation after two years spent on the Azuero lands in Panama.

F. H. Jones, president Tyer Rubber Co. (Andover, Massachusetts), spent the larger part of July at Bar Harbor, Maine.

THE PRESIDENT OF THE FEDERAL.

Few young men in the rubber trade have risen to important positions more rapidly and surely than has President Byron L. Dowse, of the Federal Rubber Mfg. Co. Beginning in 1895



PRESIDENT BYRON L. DOWSE.

with the Gormully & Jeffry Mfg. Co., continuing with the company after its absorption by the Rubber Goods Co. in 1899, as general representative, selling agent for the middle west, and finally president of the G. & J. Co., he was from first to last a business builder.

UNITED STATES RUBBER CO.'S ISSUES.

TRANSACTIONS on the New York Stock Exchange for four weeks, ending July 22:

COMMON STOCK, \$25,000,000.

[The treasury of a subsidiary company holds \$1,334,600.]

Last Dividend, April 30, 1900—1%.

Week July 1	Sales 11,400 shares	High 43 $\frac{1}{8}$	Low 40 $\frac{5}{8}$
Week July 8	Sales 3,800 shares	High 42 $\frac{1}{2}$	Low 41
Week July 15	Sales 1,500 shares	High 42 $\frac{1}{2}$	Low 41 $\frac{3}{4}$
Week July 22	Sales 3,300 shares	High 42 $\frac{1}{2}$	Low 41 $\frac{1}{2}$

For the year—High, 47 $\frac{1}{2}$, March 1; Low, 36, January 6.
Last year—High, 52 $\frac{1}{2}$; Low, 27.

FIRST PREFERRED STOCK, \$39,824,400.

Last Dividend, April 29, 1911—2%.

Week July 1	Sales 500 shares	High 114 $\frac{1}{2}$	Low 113 $\frac{3}{8}$
Week July 8	Sales 1,000 shares	High 115 $\frac{1}{2}$	Low 114 $\frac{1}{4}$
Week July 15	Sales 405 shares	High 115 $\frac{1}{2}$	Low 113
Week July 22	Sales 475 shares	High 113 $\frac{1}{2}$	Low 113

For the year—High, 115 $\frac{1}{2}$, July 7; Low, 109 $\frac{1}{2}$, January 18.
Last year—High, 116 $\frac{1}{2}$; Low, 99.

SECOND PREFERRED STOCK, \$9,965,000.

Last Dividend, April 29, 1911—1 $\frac{1}{2}$ %.

Week July 1	Sales ... shares	High ..	Low ..
Week July 8	Sales 200 shares	High 77 $\frac{1}{2}$	Low 77 $\frac{1}{2}$
Week July 15	Sales 200 shares	High 76 $\frac{3}{8}$	Low 76 $\frac{3}{4}$
Week July 22	Sales 300 shares	High 76 $\frac{1}{2}$	Low 76 $\frac{1}{2}$

For the year—High, 79, March 1; Low, 72 $\frac{1}{2}$, January 31.
Last year—High, 84; Low, 59.

SIX PER CENT. TRUST GOLD BONDS, \$19,000,000.

Outstanding of the 1908 issue of \$20,000,000.

Week July 1	Sales 40 bonds	High 105	Low 104 $\frac{5}{8}$
Week July 8	Sales 39 bonds	High 105	Low 104 $\frac{7}{8}$
Week July 15	Sales 54 bonds	High 105	Low 104 $\frac{3}{4}$
Week July 22	Sales 66 bonds	High 104 $\frac{7}{8}$	Low 104

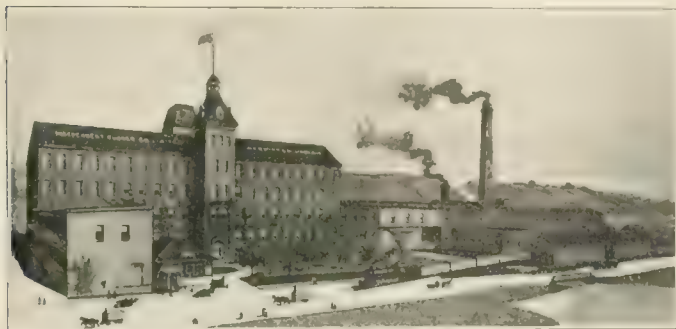
For the year—High, —; Low, —.
Last year—High, —; Low, —.

STANDARD OIL CO. ACCUSED OF INFRINGING PATENTS.

SUIT has been commenced by the Standard Asphalt and Rubber Co. against the Standard Oil Co., for infringement of patents owned by the complainant corporation since 1898, on methods of treating asphaltum with petroleum, whereby cost of production is greatly decreased. By the unlawful use of these patents, it is alleged that the oil company has been able to compete unfairly with the asphalt and rubber company.

RECENT ADDITION TO CANADA'S RUBBER FACTORIES.

CANADA'S latest rubber factory, which we have before mentioned, is the Independent Rubber Company, Limited, situated at Merriton, Ontario. At first thought it seems far away from the American centre of things until one learns that the factory is only about 10 miles from Niagara Falls when it seems much



INDEPENDENT RUBBER CO., LIMITED, MERRITON, ONT.

nearer. The works are driven by water power entirely and equipped with the very latest and best rubber shoe machinery. The factory has a capacity of some 10,000 pairs a day. Two men well known to the American rubber trade are connected with it—Mr. James Robinson, who is president, and Mr. R. F. Foote, manager.

NEW INCORPORATIONS.

A. S. BROCK RUBBER CO., June 19, 1911, under the laws of Massachusetts; authorized capital, \$25,000. Incorporators: A. S. Brock, Saugus, Annie L. Learning, Saugus, and George E. Andrews, Brockton, all of Massachusetts. To manufacture and sell rubber goods and sundries.

EUCLID RUBBER CO., July 5, 1911, under the laws of New York; authorized capital, \$1,000. Incorporators: Frank N. Rodman, Maplewood, New Jersey; Perry Schoonmaker, M. D. Euclid Hall and Linda J. Schoonmaker, both of New York City. To manufacture surgical and rubber goods. Location of principal office, New York.

GREATER NEW YORK ROYAL RUBBER CO., July 12, 1911, under the laws of New York; authorized capital, \$10,000. Incorporators: Max Weingarten, Brooklyn, New York; Philip Friebram, Abraham Samlson, both of New York City. Location of principal office, 8686 Bay Sixteenth street, Brooklyn, New York. To manufacture rubber clothing, etc.

LEE TIRE AND RUBBER CO., June 16, 1911, under the laws of Pennsylvania; authorized capital, \$100,000. Incorporators: J. Ellwood Lee, Albert A. Garthwaite, Samuel Wright, Maurice O'B. Hallowell, Charles Heber Clark, all of Conshohocken, Pennsylvania; and J. W. Johnson, C. A. McCormick and F. R. Jones, all of New Brunswick, New Jersey; and J. C. Delacom, Camden, New Jersey. To manufacture and sell goods and appliances, etc., composed wholly or partially of rubber.

THE McEWAN VULCANIZING CO., June 23, 1911, under the laws of New York; authorized capital, \$20,000. Incorporators: Frederick E. McEwan, 562 West One Hundred and Sixty-Fourth street, New York; Warren L. Cort, Roosevelt, New York; Harry W. Beals, Brooklyn, New York. To manufacture vulcanizers.

THE MANUFACTURERS' RUBBER AND SUPPLY CO., June 14, 1911, under the laws of Ohio; authorized capital, \$10,000. Incorporators: R. F. Dutt, R. T. Griffiths, William F. Pfeiffer, Frank C. Millhoff and H. E. Andress. The company has been incorporated for the purpose of producing, buying, selling, jobbing and dealing in, either at wholesale or retail, all kinds of rubber goods, etc.

THE MINNEAPOLIS AUTO TIRE REPAIR CO., June 29, 1911, under the laws of Minnesota; authorized capital, \$20,000. Incorporators: Walter D. Rightmire, Blanche Rightmire and Ben O. Kleven. The company has been incorporated to buy and sell and repair automobile tires.

SHERIDAN TIRE AND RUBBER CO., June 24, 1911, under the laws of Illinois; authorized capital, \$2,500. Incorporators: Arthur A. Levisohn, Percival Steele and Ida Slora. The company has been incorporated to manufacture, repair and sell rubber tires, etc.

STANDARD RAINCOAT CO., June 26, 1911, under the laws of New York; authorized capital, \$40,000. Incorporators: Wm. Schor, Cleo Schor and Charles Pechner, all of New York. To manufacture waterproof coats.

STANDARD WOVEN FABRIC CO., March 16, 1911, under the laws of Massachusetts; authorized capital, \$400,000. Incorporators: Herbert F. Banas, John E. Clarke and Wm. K. Wheeler, all of Athol, Massachusetts. The company has been incorporated for the purpose of dealing in belting, hose and woven fabrics.

VULCAN RUBBER CO., June 20, 1911, under the laws of Pennsylvania; authorized capital, \$100,000. Incorporators: M. Liebel, Jr., Erie, Pennsylvania; Eugene Liebel, Oil City, Pennsylvania; William Kaul, St. Mary's, Pennsylvania; Frank Kaul, St. Mary's, Pennsylvania; Frank Oberkirch, St. Mary's, Pennsylvania; and Bernard Cochran, Erie, Pennsylvania. To manufacture and sell rubber goods and products, etc.

TWO OF GRANBY'S HISTORIC SPOTS.

THE house on the right is the residence of the late S. H. C. Miner. In the two-story building at the left was a tiny office,



HOME AND OFFICE OF THE LATE S. H. C. MINER, AT GRANBY, P. Q.

a favorite place, where he transacted a great deal of his widely diversified business.

CATCH PHRASES FOR TIRES.

The alert advertising men are ever in search of striking illustrations, apt descriptions, and easily remembered catch phrases. Here are what they have evolved for automobile tires.

B. F. Goodrich Co.: "Best in the long run."

Hartford Rubber Works: "The tire that lasts."

Morgan & Wright "tires are good tires."

Diamond Rubber Co.: "Are the best tires."

Fiske Rubber Co.: "The tires that wear."

Federal R. Mfg. Co.: "The tire that won't blow out."

Firestone Rubber Co.: "Quality-Service."

Continental Tire & Rubber Co.: "The world's best."

Goodyear Tire & Rubber Co.: "Oversize, can't cut rim."

TRADE NEWS NOTES.

The interesting exhibit of the Continental Rubber Co., New York, at the recent Rubber Exhibition in London, under the management of Mr. Van der Linde, was notably successful in attracting the attention of practical visitors.

With additions of 2,000 to the working force of the Goodyear Tire and Rubber Co., and 2,000 to the employes of the Firestone Tire and Rubber Co., it is easy to see where the ten-thousand increase in the population of Akron, Ohio, comes from.

The Acushnet Rubber Co. has started, in New Bedford, Massachusetts, to extract rubber from low-grade gums.

The Pennsylvania Rubber Co. is making a decided success of the Polak solid tires for trucks.

Ladders for high tapping on *Castilloa* trees were shown at the London Rubber Exhibition by the inventor, Mr. Graves, of the Mutual Rubber Production Co. No. 1, Chiapas, Tabasco, Mexico. He was awarded special mention for his exhibit.

Hot weather, the necessity for extensive repairs and improvements, and—in some cases—shortage of orders, resulted in a more than usually prolonged shutdown of important rubber factories this summer. Among the plants affected may be mentioned those of the Boston Rubber Shoe Co., at Edgeworth and the Fells, Massachusetts; the Alice and Millville mills of the Woonsocket Rubber Co.; the National India Rubber Co., Bristol, Rhode Island, and nearly all the factories at Naugatuck, Connecticut.

W. J. B. Stokes, president of the Home Rubber Co., Trenton, New Jersey, is traveling in the West.

The business of the Newark Tire Repair Co., of 21 Camfield street, Newark, New Jersey, has been purchased by Dan H. Smolk, who was connected with the Goodrich Tire Co. for the last four years. He will continue the business and will carry stock of all makes of tires; likewise doing vulcanizing and repairing.

W. F. Bass, vice-president and general manager of the General Rubber Co., and W. H. Blackwell, treasurer of the same company, sailed for Europe on a business trip July 5. Mr. Blackwell returned on the 28th. Mr. Bass is expected back about the middle of August.

A. T. Holt, formerly superintendent of Whitall Tatum Co.'s rubber sundries factory, is now located at Columbus, Ohio.

The L. & M. Rubber Co., Carrollton, Ohio, have equipped a plant for the manufacture of automobile tires and will do business under the trade mark of the "Buckskin Brand." H. L. Miller, formerly with the Miller Rubber Co., Akron, Ohio, is connected with the company.

A new firm in New York as importers and brokers in crude rubber are Eggers Brothers & Co., with an office at No. 16 Exchange place. The members of the firm are Alfred C. and Ludwig T., both sons of Mr. Anton Eggers, of the Goodyear's Rubber Glove Co. The company have excellent foreign connections and will handle everything in the line of crude rubber, gutta percha, balata, etc.

W. C. Coleman, of the American Wax Co. (Boston, Massachusetts), was not only successful in interesting many visitors to the International Rubber Exhibition in "Amax," but secured Heilbut Symons & Co. as sole agents for the United Kingdom.

The Interstate Rubber Co., Cleveland, Ohio, organized to deal in rubber surfaced and waterproof clothing, has for its officers W. J. Anderson, president, and A. E. Wurster, secretary and treasurer. Both were formerly connected, in a selling capacity, with the Ohio Rubber Co., of Cleveland. They have fitted up sample room, shipping and stock rooms at 1390 West Ninth street, Cleveland.

Rubber Heels, made in England, including revolving heels, are on sale in Canada, as for example, the Wood-Milne heel.

In his six-day trip from Hartford to Chicago, Mr. Suisman, a representative of the Hartford Rubber Works Co., purposely came to New York city to try out its bad roads.

MR. MINER'S PROPHECY FULFILLED.

Just a year ago the late S. H. C. Miner commenting on the high price of crude rubber said:

"So they look for \$3 rubber, and may be \$4 rubber, do they, almost all of them? The great majority sadly predict continued high prices? I'm glad they do, for majorities are usually wrong. Personally I am just as sure of seeing dollar rubber again as I am sure that I have ever seen it. All of this fine Pará that has gone into automobile tires forms a huge sinking fund for us. When we begin to spend it, crude rubber will accumulate; for awhile big operators and wealthy manufacturers will stock up at high prices, but they will soon tire of that, and then prices will tumble. Few appreciate what plantation rubber will do for us in the next five years. Where we get 4,000 tons now, we will be receiving 40,000 or 50,000 tons. Then, too, I see the beginning of a greatly stimulated production of wild rubber. The drop won't come in a minute, but it will come, and dollar rubber some time in the future is a certainty."

THE "WIRE TRUST" IN COURT.

FINES aggregating \$43,000 were imposed by Judge Archibald on July 25, upon 37 out of the 83 individuals indicted in connection with the Government's prosecution of the so-called "Wire Trust." This result arose from the plea of "*nolo contendere*," equivalent to pleading guilty. Amongst the parties against whom indictments had been issued were Ferdinand and Carl Roebling, of the Roebling's Sons Company, Herbert L. Satterlee, president of the Habirshaw Wire Company, and officers of the American Steel and Wire Company.

Ferdinand W. Roebling, who had been indicted under several counts, was amongst those who pleaded and was fined \$1,700, the heaviest amount imposed. Mr. Satterlee was not present to plead. The answers of other defendants are expected at an early date.

PERSONAL MENTION.

R. B. BAIRD faithfully attended every meeting of the various important committees of which he was a member at the Rubber Exhibition in London.

Webster Norris, formerly superintendent of the New York Rubber Co., is spending the summer at Christmas Cove, Maine.

"Dan" C. Swander, of the Firestone Tire and Rubber Co., Akron, is making a hit as a lecturer and writer on tire topics.

Commodore E. C. Benedict, of the United States Rubber Co., when last in Brazil presented the Mayor of Pará with a copy of "A Souvenir of Indian Harbor," in which he had inscribed: "His Excellency Senator Antonio Lemos. This is simply a finger-board, to direct you to my home, where a warm welcome awaits you."

When William T. Baird and Robert B. Baird, of the Rubber Trading Co., New York, desire to go to Europe, or off on long motor trips, they have two excellent business proxies in their sons, R. L. Baird and C. W. Baird.

J. C. Stedman, M.D., physician to the Rubber Club of America, went to Europe August 1.

A. W. Stedman, of the New York Commercial Co., golf enthusiast, played 36 holes at the Country Club, Brookline, Massachusetts, on July 4, with the thermometer 104 in the shade.

John K. Mitchell, of Philadelphia, president of the Philadelphia Rubber Works Co., is in Europe.

Hon. L. D. Apsley, president of the Apsley Rubber Co., Hudson, Massachusetts, is back from Europe.

Frederic C. Hood, treasurer of the Hood Rubber Co., Boston, returned from Europe just in time to take charge of the mid-summer outing of the Rubber Club of America and to take part in the 25th anniversary of the class of '86, Harvard, of which he was a member.

George B. Hodgman, president of the Hodgman Rubber Co. (New York) goes on a long trip in the state of Maine the middle of August.

THE LATEST PLANT FOR MANUFACTURING DRUGGISTS' RUBBER SUNDRIES.

Whitall Tatum Company, New York, manufacturers of glass-ware and druggists' sundries, have erected at Keyport, New Jersey, a factory for the manufacture of rubber sundries for druggists, that is a model of its kind.

The main building is 282 feet in length and 50 feet wide, built fireproof, of hollow-tile construction, with cement finish. There is ample ventilation of the building, electricity being used for artificial illumination and for the operation of the smaller machines, tumbling barrels, etc., the spreader and churns being also operated by electric power.

These, with a 350 horsepower Cooper-Corliss engine, three boilers of 250 horsepower, two washers, three mixers and two calenders of Birmingham make, with four vulcanizers, a vacuum dryer, tubing machine and presses, constitute the equipment of heavy machinery. An ample supply of water is obtained from the town and the property, which comprises some 12 acres, fronts on the Central Railroad of New Jersey, from the tracks of which a switch is run into the factory grounds.

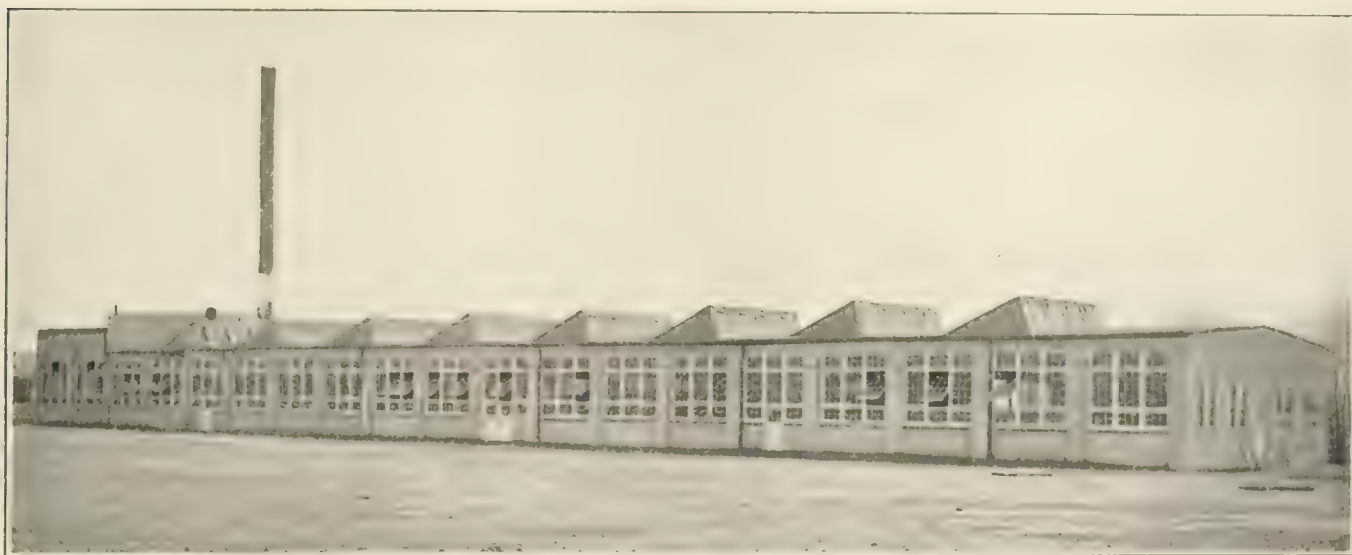
this character, will be of steel, the interior finish oak and Vermont marble, and it will conform with every requirement as to fire-proof construction. The general offices of the company will be housed in the building, any superfluous space will be rented as offices. Broadway, at Fifty-eighth street, will be the site of the building, which it is planned to complete inside of a year.

RUBBER TILING AT EMPIRE BUILDING.

As an illustration of the enduring qualities of rubber tiling, interest attaches to the fact that at the Empire Building, Broadway, New York city, with its 100,000 persons entering daily, the original black and white marble slabs in the main corridor only lasted about three months. By the substitution of rubber tiling no repairs were needed for twelve years.

GEORGE WESTINGHOUSE HAS A NEW AUTO TIRE!

It is stated that George Westinghouse, of air-brake fame, has invented a new tire for automobiles, in which the resilient feature is produced by the use of air springs in place of rubber. That the mechanical genius, to which the world is indebted for so many important discoveries, should have been turned to the perfection of a substitute for the rubber tire, is not by any



WHITALL-TATUM CO.'S RUBBER WORKS.

Connected with the main factory is a second building, of fire-proof construction with concrete roof hung on girders of the same material, 90 feet in length and 25 feet wide, which is devoted entirely to spreading and dipping.

The original glass business of the firm was started at Millville, New Jersey, in 1806, the firm name being changed to Whitall, Tatum & Company in 1857; in 1901 it was incorporated as Whitall Tatum Company. The company's flint glass factories at South Millville occupy buildings covering some twenty-one acres, while the green glass factories, at Millville, cover about eleven acres. A third glass plant has lately been opened by the company, at Stroudsburg, Pa., all the establishments being equipped with the completeness that distinguishes the rubber works at Keyport.

UNITED STATES RUBBER CO.—NEW BUILDING.

PLANS have been approved and a contract awarded for the new office building the United States Rubber Co. will erect in New York. In altitude and dimensions, the new building will rank with the great skyscrapers of the metropolis, twenty-one stories, or 321 feet, with basement and sub-basement, having been determined upon for its height, while its area will be 120x100 feet. Nor will it suffer by comparison with the finest of the city's business buildings in architectural beauty. The exterior walls will be of marble, the frame, as in all buildings of

means remarkable, almost all inventors having at one time or another given this subject their attention. As to the truth of the statements appearing in the press, that the employment of thousands of workmen in the near future in the manufacture of the new tire was projected and complete manufacturing arrangements perfected, that remains to be seen. If the published descriptions of the invention are founded only partially on fact, the new tire is not likely to seriously affect the price of crude rubber or the demand for rubber tires.

CHICAGO STAMP TRADE CONVENTION.

WITH an attendance of about 130 representatives from various parts of the country the Stamp Trade Convention, held at Chicago, June 20 to 23, made a goodly showing.

Special interest attached to the organization of the International Stamp Manufacturers' Association, the title indicating the comprehensive scope of the new body intended to forward the interests of the trade. Mr. M. L. Willard was elected president of the association, in the formation of which he had been most energetic.

Business and official matters occupied a large portion of the time, but among general subjects was an address by Mr. Louis Melind on "Costs of Production." Next year's Convention will be held on June 19, 20, 21 and 22 at New York City.

AMERICAN CHEMICAL SOCIETY.

The forty-fourth general meeting of the American Chemical Society, was held at the German House, Indianapolis, Indiana, and was in session from June 27th to July 1st. At the general meeting of the Society some interesting papers were read, and subsequently meetings of the Physical, Inorganic and Biological sections were held, all of which were well attended, some 400 members being present. Meetings of the Fertilizer, Industrial and Physical divisions, and of the sections of Biological and India Rubber Chemistry were also held, the latter being an informal meeting at which the advisability of continuing the rubber section was discussed, also means of increasing the activity and interest of members, in its work.

At the adjourned meeting of this section, held later in the day, Dr. Oenslager was elected temporary presiding officer in the absence of the chairman. A preliminary report of progress was made by the Committee on Methods of Analysis, in which it was stated that the committee was not ready to report on any method.

The Committee on Specifications made a report, and were discharged with thanks. This report suggested that the Council of the Society appoint a committee on specifications of rubber goods. Such committee to act in conjunction with a similar committee from the Division of Industrial Chemists. This recommendation was adopted and the Council has accordingly been petitioned to appoint the committee.

A lengthy discussion on the question of methods of analysis was then held, and it was finally voted that all members of the Section be asked to furnish the Committee on Methods of Analysis with their methods for the determination of acetone extract, free sulphur, total sulphur, and ash in rubber compounds. Also that samples of rubber when sent out be sent to all the members of the Section who expressed a willingness to make co-operative analyses for purposes of comparison.

The question of arousing the interest of members of the Section in its work, occupied most of the time of the session, manufacturers being urged to allow their chemists to communicate, in confidence, if desired, the methods of analysis employed in their laboratories and to permit the active co-operation of the chemists in the work of the Section. Members were also invited to correspond with the secretary, Frederick J. Maywald, 89 Pine street, New York, on the subject of the work of the Section.

PERSONAL MENTION.

Francis H. Holton, who comes pretty near being the dean of the rubber sundries business, is 80 years of age, hale and hearty, and lives in Akron. He still takes a deep interest in everything in rubber, although he has retired from active practice in factory troubles.

Charles A. Daniel, proprietor of the Quaker City Rubber Co. (Philadelphia, Pennsylvania) has just returned from a somewhat lengthy European trip.

John S. Singleton, advertising manager for the Firestone Tire & Rubber Co., has gone to Europe.

Thomas A. Forsyth, president of the Boston Belting Co., and Patten, the Chicago cotton king, recently found common interests when the latter examined the plans for the magnificent Forsyth Dental Infirmary. Something of the kind is said to be contemplated for the West by Mr. Patten.

Seymour J. Camp, foreman of the Derby Rubber Co., Derby, Conn., had a narrow escape when a tire of the automobile in which he was riding with a friend, burst, causing the car to crash into the rail of a bridge they were crossing. His companion was hurled from the car, over the rail into the river. The car, in which Mr. Seymour remained, lodged on the edge of the bridge, overhanging the water thirty feet below. He was badly bruised and shaken up.

TRADE NEWS NOTES.

At a recent meeting of the Council of the town of Granby, William H. Miner was elected a member of that body, to take the place of S. H. C. Miner, deceased. Mr. Miner has also been elected on the boards of various church organizations and town committees on which his uncle served.

The Vulcanized Rubber Company, New York, announce their removal to their new offices and salesroom in the Gramercy Building, 251 to 255 Fourth avenue, corner of Twentieth street.

The Plymouth Rubber Co., Stoughton, Massachusetts, have removed to their new office and salesroom, 11 West 17th street, New York, which will be in charge of Messrs. T. Frank McCarty and Joseph M. Sydeman.

The Goodyear Tire and Rubber Co., Akron, Ohio, is constantly adding to the number of its agencies. Recent additions are a branch at 723-25 South Olive street, Los Angeles, California, in charge of E. Lingenfelder; 361-63 Golden Gate avenue, San Francisco, California, in charge of A. C. Leonard; 1172 Bedford avenue, Brooklyn, T. C. Coleman, manager, and 26 High street, Hartford, Conn., in charge of E. S. Edwards.

Fisk "Gripfast" motorcycle tires made a record for themselves at New Orleans recently when an "Indian" motorcycle, equipped with them, won three of the principal events.

R. H. Pease, Jr., made an extensive trip through Japan in behalf of the Goodyear Tire and Rubber Co. He reports that the people of Japan are taking an active interest in the manufacture of rubber goods, rubber packing in particular. A complete line of rubber goods of Japanese manufacture was exhibited at Kobe. Mr. Pease believes this active interest on the part of Japan in the manufacture of rubber goods will in time seriously affect the importation of American made goods. The various branches on the Pacific Coast have been largely interested in the development of American importations in Oriental countries.

The grotesque and strangely appareled Michelin twins, who proved so attractive an advertisement for Michelin tires in Europe, and whose appearance will be familiar to those who have seen the "Bibendum" books issued by the Michelin Tire Co., Milltown, New Jersey, have located at Coney Island, New York, for the current season. Whether their unique "makeup" and antics will prove as attractive as in Europe, where they were the subject of universal press comment, remains to be seen.

Charles R. Flint is still in the amalgamating business. His company, Charles R. Flint & Co., bankers, recently merged four companies making computing and tabulating appliances. The new combine is called the Computing-Tabulating-Recording Co.; its capitalization including \$12,000,000 stock, and \$7,000,000 6 per cent. thirty year sinking fund gold bonds. The companies were the International Time Recording Co., the Tabulating Machine Co., the Computing Scale Co., and the Bundy Manufacturing Co.

On the evening of July 7, lightning struck a barn on the country estate of Charles H. Arnold, Stonehame, Mass., of Poel & Arnold, rubber importers, New York. The barn was burned, but a sudden shift of the wind, saved the garage, outbuildings and the big colonial mansion.

The Buckeye Rubber Co., Akron, Ohio, has been granted permits for the erection of several new buildings, the total cost of which will be \$60,000. One 60 x 80 feet and four stories high, a thoroughly fireproof structure of brick and concrete, will be used for manufacturing purposes. Another, a one-story structure, 40 x 225 feet, will be an addition to the shipping and stock rooms.

The waterproofing and insulating specialties of the J. A. & W. Bird Co. (Walpole, Massachusetts) have been transferred to the Flintkote Manufacturing Co., of Rutherford, New Jersey.

Recent Patents Relating to Rubber.

UNITED STATES OF AMERICA.

ISSUED JUNE 6, 1911.

- N**O. 994,118. Pneumatic bulb for horns. J. A. Broadfield, Philadelphia, Pa.
 994,174. Resilient wheel with pneumatic tube. J. C. Matheson, San Francisco, Cal.
 994,210. Protector for pneumatic tires. D. B. Stevenson, Rankin, Pa.
 994,230. Hose coupling. W. J. and J. H. Yancey, Brockton, Mass.
 994,237. Divisible rim. F. R. Barker, Boston, and J. Greenwood, Walpole, Mass.
 994,247. Removable tubular rim. J. C. Cole, assignor to The Fisk Rubber Co.—both of Chicopee Falls, Mass.
 994,455. Hose support. T. J. Glover and John B. Luber—both of Portland, Oregon.
 994,558. Pump for liquid sprayers. L. A. Aspinwall, assignor to Aspinwall Mfg. Co.—both of Jackson, Mich.
 994,610. Automobile tire. A. D. Simpson, Orion, Kansas.
 994,611. Means for raising sunken vessels. J. Skatschkoff, St. Petersburg, Russia.
 994,644. Adjustable tire support. E. W. Kingsley, Los Angeles, Cal.
 994,664. Hose-coupling applying implement. W. Tankersley, La Junta, Colo.

Trade Mark.

- 55,544. Atlas Chain Co., Brooklyn, N. Y. The word *Atlas*. For artiskid chains.

ISSUED JUNE 13, 1911.

- 994,723. Hose coupling. F. Davis, Atlanta, Ga.
 994,759. Combined eraser and pen extractor. F. H. Lamoreux, Smithshire, Ill.
 994,762. Hose coupling. J. Lehmann and M. Woltek, Wellsville, N. Y.
 994,780. Spraying attachment for garden hose. G. Olney, Hobart, Tasmania, Australia.
 994,861. Hose and gasket. A. P. Miller, Chicago, Ill.
 994,931. Method of waterproofing fabrics. P. O. Keilholtz, Baltimore, Md.
 994,969. Armor for tires. J. M. Barnett, Oskaloosa, Iowa.
 994,974. Removable rim. E. J. Bushey, New York, N. Y.
 995,010. Vehicle wheel. T. B. Jeffery, Kenosha, Wis.
 995,026. Anti-skidding device for automobiles. R. A. Moore, Chicago, Ill., assignor to Moore Auto Skid Preventer Co., New York.
 995,115. Resilient vehicle-tire. W. H. Clark, West Burlington, N. Y.
 995,119. Tire protector. J. F. Collins, Wilmerding, Pa.
 995,185. Hose connector. E. J. Rohlbacher, Portland, Ore.
 995,372. Tire chain. A. B. Saliger, New York, N. Y.
 995,377. Cap or closure for milk or other bottles. E. D. Schmitt, Baltimore, Md., assignor to American Bottle Cap Co., Philadelphia, Pa.
 995,428. Anti-slipping device for resilient tires. O. A. Trana, assignor of one-half to W. J. Westphal—both of St. Paul, Minn.

ISSUED JUNE 20, 1911.

- 995,583. Tire saver. L. R. Willour, assignor to The Ashland Mfg. Co., Ashland, Ohio.
 995,620. Cushion tire. G. H. Matteson, assignor of one-half to J. M. Hayes—both of Toledo, Ohio.
 995,732. Core for molding tires. F. S. Stiles and J. Yemiker, assignors to The Faultless Machine & Mfg. Co.—all of Akron, Ohio.
 995,783. Method of marking rubber hose. C. D. Garretson, assignor to Electric Hose and Rubber Co.—both of Wilmington, Del.
 995,961. Valve-base for pneumatic tires. G. W. Greene, Watertown, Mass., assignor to Shawmut Tire Co., Boston, Mass.
 995,966. Hose coupling. C. Hill, Phoenix, British Columbia, Canada.
 996,010. Hand stamp. H. S. Folger, Chicago, Ill.
 996,025. Device for stamping or marking meat. A. D. Melvin, Washington, D. C.

Design.

- 41,496. Ornamental design for rubber vehicle tire. A. N. Hood, Newton, Mass., assignor to Shawmut Tire Co., Mass.

Trade Marks.

- 50,308. The Omo Mfg. Co., Middletown, Conn. The word *Omo*. For protective napkins for children.
 52,845. Jenkins Rubber Co., Elizabeth, N. J. The word *Overland*. For rubber packing, etc.
 55,478. H. H. Sheppard, Providence, R. I. The word *Comfort*, with the letters *H. H.* above line and *S* underneath in triangle. For waterproof fabric.

ISSUED JUNE 27, 1911.

- 996,351. Pneumatic vehicle tire. G. Lambright, Newark, N. J., assignor of one-half to F. A. Magowan, New York, N. Y.
 996,358. Pneumatic pressure gage. O. Olsen, Fruitvale, Cal.
 996,464. Hose holder. J. A. Darst and M. Brittain, Caldwell, Kansas.

Trade Mark.

- 50,987. O'Sullivan Rubber Co., Lowell, Mass. The word *O'Sullivan's* over the representation of a rubber heel. For boots, shoes, etc.

[NOTE.—Printed copies of specifications of United States patents may be obtained from THE INDIA RUBBER WORLD office at ten cents each postpaid.]

GREAT BRITAIN AND IRELAND.

PATENT SPECIFICATIONS PUBLISHED.

The number given is that assigned to the Patent, and the filing of the application, which in the case of these listed below was in 1909.

*Denotes Patents for American Inventions.

[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, JUNE 8, 1911.]

- 3,389 (1910). Tool for applying tire covers. G. Gason, Oberseifersdorf, near Zittau, Saxony.
 3,434 (1910). Protective covering for pneumatic tires. L. J. Tatlow, Holyoke, Mass.
 3,603 (1910). Pneumatic tire with elastic lining. B. W. Crump, Woodlands, Rickmansworth, Hertfordshire.
 *3,655 (1910). Boot with elastic gore. A. Schlesinger, St. Louis, Mo.
 3,656 (1910). Rubber heel pad. J. H. Pemberton, Manchester.
 3,745 (1910). Pneumatic tire. H. Grosselin, Ardennes, France.
 3,852 (1910). Wheel tire. F. Davies, London.

[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, JUNE 14, 1911.]

- 3,951 (1910). Pneumatic tire. I. S. McGieham, London.
 3,991 (1910). Resilient tires. W. Butterfield and T. A. Jones, Cardiff, Wales.
 3,933 (1910). Rubber overshoe. R. M. Dobbie, Ayr, Scotland.
 4,080 (1910). Elastic compositions. W. Plinatus, Berlin, Germany.
 4,102 (1910). Wheel tires. P. Chevalier, Moulins-Sur-Alliere, France.
 4,189 (1910). Isoprene; caoutchouc. F. E. Matthews and E. H. Strange, London.
 4,449 (1910). Resilient wheels. A. T. Reid and J. Rickie, Glasgow, Scotland.
 *4,267 (1910). Pneumatic vehicle wheel and brake. N. Schenk, St. Louis, Mo.
 *4,287 (1910). Pneumatic resilient wheel. J. Neff, West Hoboken, N. J.
 4,302 (1910). Infants' soothers. R. J. Shannon, London.
 *4,328 (1910). Vehicle wheels. W. N. Booth, Cleveland, Ohio.
 4,347 (1910). Teething pads. P. E. Woolf, Birmingham.
 4,486 (1910). Hot water bottle, etc. A. H. Cross, Wimbledon Park, London.
 4,499 (1910). Vehicle wheels. J. A. Challiner and C. S. Challiner, Manchester.
 4,517 (1910). Pneumatic stenciling apparatus. P. R. Grace, Shell Beach, Kent.

[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, JUNE 21, 1911.]

- *4,564 (1910). Vehicle wheels. F. H. Crabtree, Anaconda, Montana.
 *4,566 (1910). Vehicle wheels. C. B. Siner, Philadelphia, Pa.
 4,616 (1910). Molding India Rubber. Kay & Co. and J. H. Coffey, Bury, Lancashire.
 4,620 (1910). Synthetic caoutchouc; Isoprene. F. E. Matthews and E. H. Strange, London.
 4,755 (1910). Vehicle wheels. C. G. D. Webb, London.
 4,838 (1910). Rubber inner sock. H. Goodings, Barnet, Hertfordshire.
 4,870 (1910). Wheel tires. A. E. Wale, Elmdon, near Birmingham.
 4,879 (1910). Wheel tires. A. Jacobs and W. Gummer, London.
 4,904 (1910). India rubber substitute. Baron F. Zu Aichburg, Karnten, Austria.
 4,971 (1910). Wheel tires. M. Rawwolf and Lederfabrik Hirschberg, Saale, Germany.
 4,972 (1910). Inflating tires. J. I. Rodway and J. Esson, Johannesburg, Transvaal, South Africa.
 *5,022 (1910). Hose pipes. Revere Rubber Co., Boston, Mass.
 5,103 (1910). Vehicle wheels. W. S. Boulton, Wandsworth, London.

[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, JUNE 28, 1911.]

- 5,277 (1910). Vehicle wheels. L. Mote, London.
 5,332 (1910). Seamless lining for air tubes. C. J. Watts, Cleveancy, near Calne, Wiltshire.
 5,494 (1910). Tire attachments for vehicle wheels. S. Balbiani, Milan, Italy.
 5,525 (1910). Cow milkers. W. H. Lawrence and R. Kennedy, Glasgow, Scotland.
 5,611 (1910). Tire attachments to rims. V. Place and R. Chapon, Paris.
 5,697 (1910). Tobacco pipe cleaners. P. Schumacher, Gand, Belgium.
 5,761 (1910). Vehicle wheels. W. Cope, Birmingham.
 5,871 (1910). Infant soothers. J. Walsch and R. D. Kay, London.
 5,784 (1910). Tire attachments to rims for india rubber tires. C. G. Zuche, Juben, Germany.

The New Japanese Tariff.

WITH reference to the Statistics of Japanese Imports of India Rubber, on page 306 of June, 1911, issue, the subjoined tables will be of interest, as showing the detailed application of the tariff now expiring and of that which is taking its place. The rates given for the former are the "conventional rates," applicable to importations from America, and in some cases lower than those of the old general tariff.

Owing to the classifications materially differing between the two tariffs, an exact comparison of their incidence is not practicable. Such concessions as other nations may obtain upon the rates of the new tariff, will doubtless be likewise applied to importations from the United States.

Crude rubber, it will be observed, is retained on the free list, as well as old rubber, only fit for remanufacturing.

OLD JAPANESE TARIFF ON IMPORTATIONS FROM UNITED STATES.

	Unit	Yen.	Ad Valorem.	American Equivalent.
484. India rubber or caoutchouc—				
1. Crude or raw		Free	....	Free
2. Plates and sheets				
A. Soft—				
a. Not exceeding 1 m. m. (.039 inch) in thickness.....	100 kin	87.80	....	\$32.95 100 lbs.
b. Others	100 kin	35.90	....	\$13.46 100 lbs.
B. Hard	100 kin	37.80	....	\$14.13 100 lbs.
3. Rods .....		....	10%	10%
4. Tubes—				
A. Soft .....		....	10%	10%
B. Hard .....		....	10%	10%
5. All other .....		....	10%	10%
485. Gutta Percha—				
1. Crude or raw		Free	....	Free
2. Plates and sheets	100 kin	39.40	....	\$14.78 100 lbs.
3. All other .....		....	20%	20%
486. Caoutchouc and gutta percha manufactures, not otherwise provided for (including inner packings)—				
1. Combs	100 kin	161.00	....	\$60.38 100 lbs.
2. Teats	100 kin	171.00	....	\$64.13 100 lbs.
3. All others .....		....	40%	40%
Caoutchouc, manufactures of .....		....	10%	10%
487. Dental rubber .....		....	20%	20%
488. India rubber solution (including receptacles).....	100 kin	18.00	....	\$6.75 100 lbs.
489. Waste or old caoutchouc (fit only for remanufacturing).....		Free	....	Free
490. Hard fibers, rods, plates, sheets, tubes, etc.....	100 kin	10.90	....	\$4.09 100 lbs.

NEW JAPANESE TARIFF (IN FORCE FROM JULY 17, 1911).

	Unit.	Yen.	Ad Valorem.	American Equivalent About
PARAGRAPH 143. Crude india rubber, crude gutta percha and substitutes thereof.		Free	....	Free
PARAGRAPH 630. Waste or old india rubber and gutta percha, fit only for remanufacturing.		Free	....	Free
PARAGRAPH 629. MANUFACTURES OF INDIA RUBBER OR GUTTA PERCHA, NOT OTHERWISE PROVIDED FOR—				
1. INDIA RUBBER SOLUTION (including receptacles).....	100 kin	18.10	....	\$6.79 100 lbs.
2. INDIA RUBBER PASTE, RECLAIMED INDIA RUBBER AND OTHER UNVULCANIZED INDIA RUBBER .....		....	20%	20%
3. DENTAL RUBBER	100 kin	75.80	....	\$28.45 100 lbs.
4. OTHER—				
A. SOFT—				
A 1. In lumps .....		....	20%	20%
A 2. Rods and cords—				
a. Combined with metal, tissues, yarns, threads, cords or fibers	100 kin	8.65	....	\$3.24 100 lbs.
b. Other .....		....	20%	20%
A 3. Plates and sheets—				
a. Combined with metal, tissues, yarns, threads, cords or fibers	100 kin	7.40	....	\$2.78 100 lbs.
b. Other—				
b-1. Not exceeding 1 millimeter (.039 inch) in thickness	100 kin	95.60	....	\$35.85 100 lbs.
b-2. Other	100 kin	50.30	....	\$18.86 100 lbs.
A 4. Tubes—				
a. Armored with metal, inside or outside.....	100 kin	15.30	....	\$5.75 100 lbs.
b. Other—				
b-1. Combined with tissues, yarns, threads, cords, or fibers, or with metal insertion.....	100 kin	13.80	....	\$5.18 100 lbs.
b-2. Other	100 kin	93.20	....	\$34.95 100 lbs.
A 5. Belts and belting for machinery	100 kin	22.20	....	\$8.33 100 lbs.
A 6. Threads, strips, bands, rings and washers—				
a. Combined with metal, tissues, yarns, threads, cords or fibers	100 kin	15.30	....	\$5.75 100 lbs.
b. Other	100 kin	55.60	....	\$20.85 100 lbs.

	Unit.	Yen.	Ad Valorem.	American Equivalent.
A 7. Erasers	100 km	24.90		\$9.34 100 lbs.
A 8. Water bottles	100 km	48.50		\$18.19 100 lbs.
A 9. Teats (including inner packings)	100 km	132.00		\$49.50 100 lbs.
A 10. Mats and mattings			30%	30%
A 11. Other			40%	40%
B OTHER				
B 1. In lumps, bars or rods, plates and sheets	100 km	35.40		\$13.28 100 lbs.
B 2. Tubes	100 km	38.90		\$14.60 100 lbs.
B 3. Rings and washers	100 km	43.70		\$16.40 100 lbs.
B 4. Combs (including inner packings)	100 km	157.00		\$58.90 100 lbs.
B 5. Other			40%	40%
PARAGRAPH 355 (EXTRACT)				
1. BOOTS (of india rubber)	100 km	50.00		\$18.75 100 lbs.
2. OVERSHOES (of india rubber)	100 km	51.60		\$19.35 100 lbs.

ANOTHER USE FOR RUBBER TUBING.

In large poultry establishments fowls are often fed by machinery, the forced feeding resulting in quicker and better fattening. The apparatus consists of a reservoir full of pasty food, a small force pump and a short length of rubber tubing.



FEEDING MACHINE SHOWING FOWL SWALLOWING RUBBER TUBE.

The fowl is held under one arm, its neck stretched out, the rubber tube run down as far as the crop, and a charge of food forced in. It does not hurt the bird, is profitable and is one more unusual use for rubber.

MAKING TYPEWRITER CUSHIONS.

THOSE who are familiar with the rubber cushions that cover the keys of typewriters may wonder how the letters on the rubber are applied, or they may not. Yet the manner of doing it was the result of much experimentation and was guarded by a patent. To begin with, it may be well to state that the letter is not painted on but is inlaid. The minute pieces of rubber that formed the letter could not be cemented and stuck on as they would curl and prove infinitely troublesome. The problem was finally solved by making the caps of very rich stock and semi-vulcanizing the stock from which the letter was cut. Then when it was laid upon the cap and pressure applied, it sunk into the softer stock and was then vulcanized securely in place. And that was only one of the many vexatious little problems that arose before the cushions were perfected.

The experimenters had to determine whether or not the thin rubber constituting the top of the cap had body enough to admit of the letter being pressed into it and vulcanized there. Then they had to find out by trial whether the "touch" of the top of the cap had been impaired by the application of the letter.

Next they put the keys to long and severe usage to ascertain whether the union between the letter and the key was strong enough to withstand the continuous pounding that the keys undergo in use. It was possible that under such continuous flexing the letter would come away from the key; or, at any rate, open up seams between the letter and the key so as to destroy its smooth surface and also weaken it. Few vulcanized joints between two pieces of rubber had ever before been placed



PARTS THAT MAKE UP A RUBBER KEY CUSHION.

[From left to right: first is a blank cut out of the stock; second, letter died out of semi-vulcanized stock; third, letter placed in middle of the blank; fourth, cushion after vulcanization; fifth, cross section of key with cushion attached.]

in a position where they were called upon to withstand any usage at all analogous, and it was only when the cushions stood up to the work that the inventors knew they were really successful.

FLUCTUATIONS IN AFRICAN RUBBER EXPORTS.

By grouping in comparative form, the principal amounts quoted by Mr. Cuthbert Christy, in his work upon the "African Rubber Industry," the fluctuations of the exports of the various African rubber producing countries may be seen. The average result would seem to be a reduction of about 45 per cent. from the highest point.

AFRICAN RUBBER EXPORTS (pounds).

	Earliest record.	Maximum.	Latest record.
Gold Coast	1890 3,400,000	1898 6,000,000	1909 2,600,000
Sierra Leone	1890 1,000,000	1896 1,500,000	1909 200,000
Southern Nigeria	1893 100,000	1896 6,800,000	1908 1,400,000
Liberia			1908 170,000
French Ivory Coast	1899 1,600,000	1906 3,500,000	1908 2,200,000
Togoland			1909 336,000
Belgian Congo	1887 200,000	1901 13,000,000	1909 9,000,000
Kamerun			1910 3,350,000
Portuguese Angola		1900 6,700,000	
Uganda	1902 70,000	1908 100,000	1909 110,000

AMONG the relics recovered from the wreck of the battleship "Maine" in Havana harbor, may be mentioned a number of rubber bands. Strange to say they are found to have survived their many years' submergence in the mud and water, whereas a few weeks' seclusion in an office desk often suffices to render them hard and useless.

Review of the Crude Rubber Market.

WITH prices fluctuating slightly, but showing generally a receding tendency, in sympathy with the stagnant condition of business, the market for crude rubber is decidedly quiet. Efforts to promote an advance by those interested in higher figures, are counteracted by the large stocks on hand, which are regarded by consumers as a guarantee of still lower figures in the near future. The lack of orders at many mills leaves them at liberty to hold off for the anticipated decline.

From London an advancing market is reported, with prices steady at 4s. 9d. for Upriver fine. At this figure, large purchasers are not anxious to buy, and no business of importance was recorded.

The scrap-rubber market may be described as weak with few new orders and a downward tendency in buying and selling prices.

NEW YORK QUOTATIONS.

FOLLOWING are the quotations at New York for Pará grades, one year ago, one month ago, July 31—the current date:

PARÁ.	Aug. 1, '10.	July 1, '11.	July 31, '11.
Islands, fine, new.....	208@210	92@ 93	104@105
Islands, fine, old.....	210@212	94@ 95	...@107
Upriver, fine, new.....	215@...	97@ 98	114@115
Upriver, fine, old.....	218@...	101@102	118@119
Islands, coarse, new.....	95@...	58@ 59	61@ 62
Islands, coarse, old.....	none here	none here	none here
Upriver, coarse, new.....	147@...	81@ 82	95@ 96
Upriver, coarse, old.....	none here	83@ 84	none here
Cameta	110@...	64@ 65	67@ 68
Caucho (Peruvian) ball.....	147@...	80@ 81	96@ 97
Caucho (Peruvian) sheet.....	none here	62@ 63	none here

PLANTATION PARÁ

Fine smoked sheet.....	@209	114@115	133@134
Fine pale crepe.....	@202	113@114	132@133
Fine sheets and biscuits.....	@196	110@111	131@132

CENTRALS.

Esmeralda, sausage	130@...	77@ 78	84@ 85
Guayaquil, strip	110@...	none here	none here
Nicaragua, scrap	128@...	77@ 78	84@ 85
Panama	90@...	none here	none here
Mexican, scrap	127@...	75@ 76	83@ 84
Mexican, slab	none here	none here	none here
Mangaberia, sheet	none here	none here	none here
Guayule	80@...	43@ 44	43@ 44
Balata, sheet	@...	none here	84@ 85
Balata, block	@...	none here	63@ 65

AFRICAN.

Lopori, ball, prime.....	175@...	92@ 93	106@107
Lopori, strip, prime.....	170@...	none here	none here
Aruwimi	160@...	87@ 88	98@ 99
Upper Congo, ball, red.....	none here	89@ 90	101@102
Ikelemba	none here	none here	none here
Sierra Leone, 1st quality.....	167@...	84@ 85	98@ 99
Massai, red	167@...	84@ 85	92@ 93
Soudan Niggers	none here	none here	91@ 92
Cameroon, ball	none here	58@ 59	65@ 66
Benguela	none here	64@ 65	70@ 71
Madagascar, pinky	none here	75@ 76	80@ 81
Accra flake	none here	25@ 26	30@ 31

EAST INDIAN.

Assam	none here	78@ 79	81@ 82
Pontianak	6 1/2@ 7	6 1/2@ 6 1/4	6@ 6 1/4
Borneo	none here	none here	none here

Late Pará cables quote:

	Per Kilo.		Per Kilo.
Islands, fine	4\$450	Upriver, fine	4\$450
Islands, coarse.....	2\$300	Upriver, coarse	2\$300
Exchange	16 5/32d.		
Latest Manáos advices:			
Upriver, fine	6\$300	Exchange	16 3/16d.
Upriver, coarse	4\$400		

Statistics of Para Rubber (Excluding Caucho).

NEW YORK.

	Fine and Medium.	Coarse.	Total, 1911.	Total, 1910.	Total, 1909.
Stocks, May 31	291	60 =	351	106	101
Arrivals, June.....	1,051	450 =	1,501	401	1,549
Aggregating	1,342	510 =	1,852	507	1,650
Deliveries, June	1,042	437 =	1,479	346	1,258
Stocks, June 30....	300	73 =	373	161	392

PARÁ.

	1911.	1910.	1909.	1911.	1910.	1909.
Stocks, May 31.....	4,205	675	555	1,925	1,550	600
Arrivals, June	1,090	945	1,040	179	662	545
Aggregating	5,295	1,620	1,595	2,104	2,212	1,145
Deliveries, June	1,510	1,320	1,350	329	752	825

ENGLAND.

	1911.	1910.	1909.
Stocks, June 30.....	3,785	300	245
World's visible supply, June 30.....	6,564	2,665	1,490
Pará receipts, July 1 to June 30.....	30,290	31,515	30,080
Pará receipts of caucho, same dates.....	7,330	7,740	8,000
Afloat from Pará to United States, June 30	226	199	88
Afloat from Pará to Europe, June 30....	405	545	445

New York.

IN regard to the financial situation, Albert B. Beers (broker in crude rubber and commercial paper, No. 68 William street, New York), advises as follows: "There is really no change in the commercial paper situation since my report a month ago, a fairly good demand continuing for the best rubber names at 4@4½ per cent., and those not so well known 5@5½ per cent."

NEW YORK PRICES FOR JUNE (NEW RUBBER).

	1911.	1910.	1909.
Upriver, fine.....	\$.95@1.03	\$2.23@2.45	\$1.35@1.51
Upriver, coarse.....	.81@ .85	1.50@1.63	.98@1.05
Islands, fine.....	.91@ .98	2.13@2.30	1.31@1.42
Islands, coarse.....	.58@ .63	.93@1.05	.67@ .70
Cameta .....	.67@ .71	1.10@1.25	.78@ .82

Rubber Receipts at Manaos.

DURING May and eleven months of the crop season, for three years (courtesy of Messrs. Scholz & Co.):

	MAY.			JULY-MAY.		
FROM -	1911.	1910.	1909.	1910-11.	1909-10.	1908-09.
Rio Purús-Acre.....	357	560	218	9,875	10,041	8,629
Rio Madeira	244	131	138	3,228	3,356	3,073
Rio Juruá	365	264	251	4,163	4,349	4,217
Rio Javary-Iquitos	42	35	44	2,275	2,606	2,458
Rio Solimões	54	26	27	1,246	1,193	1,007
Rio Negro	22	4	28	513	688	583
Total	1,084	1,020	706	21,300	22,233	19,967
Caucho	569	722	586	5,100	6,931	6,406
Total	1,653	1,742	1,292	26,400	29,164	26,373
For Shipment From.						
Manaos	949	1,090	835	18,042	20,929	19,143
Para	704	652	457	8,358	8,235	7,230
Total	1,653	1,742	1,292	26,400	29,164	26,373

Para.

R. O. AHLERS & Co. report [July 11]:

During the last few days the market suddenly went up, owing to rumors of big purchases from existing stocks being made in Europe and here by speculators.

Plantation Rubber from the Far East.**EXPORTS OF CEYLON GROWN RUBBER.**

[From January 1 to June 30, 1910 and 1911. Compiled by the Ceylon Chamber of Commerce.]

	1910.	1911.
To Great Britain	533,002	1,136,954
To United States	477,737	794,989
To Belgium	24,203	152,615
To Japan		20,556
To Australia		16,714
To Canada	1,911	9,971
To Germany	8,121	7,585
To Italy	841	3,597
To France		117
To Holland		100
To India		40

Total 1,046,715 2,143,238
 [Same period 1909—472,342 pounds; same 1908—302,502.]

TOTAL EXPORTS FROM MALAYA.

[From January 1 to dates named. Reported by Barlow & Co., Singapore. These figures include the production of the Federated Malay States, but not of Ceylon.]

FROM—	1909.	1910.	1911.
Singapore (to June 7).....pounds	1,079,664	1,220,057	2,421,941
Penang (to May 27).....	1,223,361	807,433	1,764,641
Port Swettenham (to May 25).....		2,622,166	4,836,703
Total	2,303,025	4,649,656	9,023,285

Liverpool.**WILLIAM WRIGHT & Co., report [July 1]:**

Fine Pará.—With a considerable undeclared stock and a nervous feeling that further forced liquidation may be necessary in the near future, the market has been dull, with more or less moderate fluctuations. A considerable quantity has been shipped from here to New York, and doubtless a further quantity would be taken should prices recede below 4s. The crux of the situation, however, lies with the so-called syndicate's stock. Until some definite action is taken, either by actual selling or further financial support, the market is bound to continue nervous and uncertain. We can only advise manufacturers to carefully watch the course of events, and should any decided decline occur on the July tenders, to take some advantage of same. Closing value: Upriver 4s 0½d, [=98 cents]. Island 3s 11½d, [=96 cents].

PARA RUBBER VIA EUROPE.

		POUNDS.			
				H. Marquardt & Co..... 6,000	
				A. Klipstein & Co..... 2,500	
				E. Steiger & Co..... 2,000	
				H. Kluge & Co..... 1,500	
				W. L. Wallerich..... 1,000 13,000	
JUNE 24.—By the <i>Campania</i> =Liverpool:				JULY 3 By the <i>Li Cid</i> =Galveston:	
N. Y. Commercial Co. (Fine).. 72,000				Continental-Mexican Rubber Co..... *135,000	
Poel & Arnold (Coarse)..... 20,000				JULY 5. By the <i>Urdi</i> =Bahia:	
A. T. Morse & Co. (Caucho).. 1,500 93,500				J. H. Roszbach & Bros..... 22,500	
JUNE 26.—By the <i>Baltic</i> =Liverpool:				Poel & Arnold 11,000 33,500	
Wallace L. Gough Co. (Fine).. 10,000				JULY 5.—By the <i>Clyde</i> =Colombia:	
A. W. Brunn Co. (Coarse).... 2,500 12,500				G. Amsinck & Co..... 2,500	
JUNE 28 By the <i>Capitana</i> =Bolívar:				General Rubber Co..... 2,000	
American Trading Co. (Fine).. 11,500				J. Sambrada & Co..... 1,500	
American Trading Co. (Coarse) 11,000 22,500				Isaac Brandon & Bros..... 1,000	
JUNE 28 By the <i>Clashart</i> =Hamburg:				Wessels, Kulenkampff & Co... 1,000	
Wallace L. Gough Co. (Fine).. 4,500				Aglesias & Martinez..... 1,000 9,000	
A. T. Morse Co. (Caucho).... 22,500 7,000				JULY 6.—By <i>El Norte</i> =Galveston:	
JUNE 28. By the <i>Caronia</i> =Liverpool:				Continental-Mexican Rubber Co..... *75,000	
N. Y. Commercial Co. (Fine)... 38,000				JULY 6.—By the <i>Allianca</i> =Colon:	
Poel & Arnold (Coarse).... 38,000 73,000				G. Amsinck & Co..... 7,500	
JUNE 30.—By the <i>Mauretania</i> =Liverpool:				Lawrence Johnson & Co..... 4,500	
A. T. Morse & Co. (Fine).... 22,500				Isaac Brandon & Bros..... 3,000	
Raw Products Co. (Coarse).... 56,000				Gillespie Bros. & Co..... 2,000	
Robinson & Co. (Coarse)..... 22,500				Charles E. Griffin..... 1,500 18,500	
Henderson & Korn (Coarse)... 11,500				JULY 8.—By the <i>Antilles</i> =Tamajico:	
A. T. Morse & Co. (Caucho)... 22,500				N. Y. Commercial Co..... *110,000	
Robinson & Co., (Coarse).... 15,000 150,000				Ed. Maurer *55,000 *165,000	
JULY 3.—By the <i>Pennsylvania</i> =Hamburg:				JULY 11.—By the <i>Asiatic</i> =Bahia:	
Wallace L. Gough Co. (Fine).. 19,000				Adolph Hirsch & Co..... 47,000	
Raw Products Co. (Coarse).... 4,500 23,500				JULY 12.—By the <i>Prinz Joachim</i> =Colon:	
JULY 3 By the <i>Crown of Canada</i> =Bolívar:				Issac Brandon & Bros..... 9,000	
Iglesias Lobo & Co. (Fine).... 24,000				G. Amsinck & Co..... 2,000	
Iglesias Lobo & Co. (Coarse).. 9,000				August A. Lindo..... 1,500	
General Exp. Comm. Co. (Fine) 7,000				Caballero & Blanco 1,000	
General Exp. Comm. Co. (Coarse) 15,000 55,000				George A. Alden & Co..... 1,000 14,500	
JULY 3.—By the <i>Prinz Sigismund</i> =Colombia:				JULY 11.—By the <i>Saramacca</i> =Bolívar:	
A. Jaranillo & Co..... 7,000				General Exp. Comm. Co. (Fine) 40,000	
Mecke & Co..... 2,000				General Exp. Comm. Co. (Coarse) 10,000	
A. Hell 2,000				American Trading Co. (Fine)... 1,500 51,000	
Caballero & Blanco..... 1,500					
G. Amsinck & Co..... 1,000 13,500					

African Rubbers.**NEW YORK STOCKS (IN TONS).**

June 1, 1910.....	90	January 1, 1911.....	115
July 1.....	120	February 1.....	115
August 1.....	250	March 1.....	111
September 1.....	300	April 1.....	98
October 1.....	375	May 1.....	98
November 1.....	100	June 1.....	90
December 1.....	140	July 1.....	90

IMPORTS FROM PARA AT NEW YORK.*The Figures Indicate Weight in Pounds.***JULY 5.—By the steamer *Hubert*, from Manáos and Pará:**

	Fine.	Medium.	Coarse.	Caucho.	Total.
Poel & Arnold.....	121,900	31,800	137,200	64,700=	355,600
New York Commercial Co...	38,400	7,300	20,900	40,400=	107,000
De Lagotellerie & Co.....	10,000	1,400	20,500		31,900
Total	170,300	40,500	178,600	105,100=	494,500

JULY 6.—By the steamer *Minas Geraes*, from Pará:

Poel & Arnold.....	41,000	5,700	19,100	28,200=	94,000
Hagemeyer & Brunn.....	9,300	700	7,200		17,200
Total	50,300	6,400	26,300	28,200=	111,200

JULY 17.—By the steamer *Amazonense*, from Manáos and Pará:

Poel & Arnold.....	148,200	32,100	118,700	70,500=	369,500
New York Commercial Co...	36,800	13,200	37,700	122,700=	210,400
De Lagotellerie & Co.....	19,300	3,600	16,500		39,400
A. T. Morse & Co.....	27,600	4,700	5,200	500=	38,000
Hagemeyer & Brunn.....			10,600		10,600
General Rubber Co.....				6,800=	6,800
G. Amsinck & Co.....				3,600=	3,600
Total	231,900	53,600	188,700	204,100=	678,300

JULY 24.—By the steamer *Cearense*, from Manáos and Pará:

Poel & Arnold.....	147,600	27,300	138,900	32,000=	345,800
New York Commercial Co...	36,300	10,500	26,300	78,400=	141,500
A. T. Morse & Co.....	31,000	6,400	49,000		86,400
De Lagotellerie & Co.....	10,700	4,600	33,100		48,400
Hagemeyer & Brunn.....	3,600				3,600
Total	219,200	48,800	247,300	110,400=	625,700

JULY 12.—By the <i>Prinz Joachim</i>—Mollendo:			
F. Rosenstein & Co. (Fine).....	9,000		
JULY 12.—By the <i>Ocean</i>—London:			
Poel & Arnold (Coarse).....	22,500		
JULY 17.—By the <i>President Grant</i>—Hamburg:			
A. T. Morse & Co. (Fine)....	33,500		
N. Y. Commercial Co. (Fine)...	11,000	44,500	
JULY 17.—By the <i>Cedric</i>—Liverpool:			
A. T. Morse & Co. (Fine)....	40,000		
N. Y. Commercial Co. (Fine)...	27,000		
Robinson & Co. (Fine).....	18,000		
Henderson & Korn (Coarse)...	22,500		
General Rubber Co. (Fine)...	34,000		
Raw Products Co. (Coarse)...	11,500		
Muller, Schall & Co. (Coarse)	4,500		
A. T. Morse & Co. (Caucho)...	22,500		
Henderson & Korn (Caucho)...	22,500		
Wallace L. Gough Co. (Fine)...	3,500	206,000	
JULY 21.—By the <i>Atrato</i>—Mollendo:			
General Rubber Co. (Fine)....	6,000		
A. T. Morse & Co. (Caucho)...	8,000	14,000	
JULY 22.—By the <i>Campania</i>—Liverpool:			
General Rubber Co. (Fine)....	90,000		
Poel & Arnold (Fine).....	45,000		
Robinson & Co. (Fine).....	5,500		
Henry A. Gould Co. (Fine)....	4,500		
Poel & Arnold (Caucho).....	15,500	160,500	
JULY 24.—By the <i>Baltic</i>—Liverpool:			
Henderson & Korn (Caucho)...	56,000		
N. Y. Commercial Co. (Fine)...	5,000		
Raw Products Co. (Coarse)...	3,500	64,500	

OTHER NEW YORK ARRIVALS.**CENTRALS.**

[*This sign, in connection with imports of Centrals, denotes Guayule rubber.]

POUNDS.

JUNE 26.—By the <i>Advance</i>—Colon:			
G. Amsinck & Co.....	11,500		
L. Johnson & Co.....	1,500		
H. Mann & Co.....	1,000	14,000	

JUNE 26.—By the <i>Baltic</i> =Liverpool:		
James T. Johnstone.....	7,000	
JUNE 27.—By the <i>St. Paul</i> =London:		
George A. Alden & Co.....	22,500	
JUNE 28.—By the <i>Caronia</i> =Liverpool:		
A. T. Morse & Co.....	34,000	
Robert Badenhop.....	4,500	
Rubber Trading Co.....	3,000	
James T. Johnstone.....	2,500	55,000
JUNE 29.—By the <i>St. Paul</i> =London:		
General Rubber Co.....	9,000	
Muller, Schall & Co.....	15,000	
Rubber Trading Co.....	7,000	31,000
JUNE 30.—By the <i>Finland</i> =Antwerp:		
A. T. Morse & Co.....	30,000	
Muller, Schall & Co.....	9,000	39,000
JUNE 30.—By the <i>Matanzas</i> =Tampico:		
George A. Alden & Co.....	45,000	
General Rubber Co.....	5,000	50,000
JULY 2.—By the <i>Pennsylvania</i> =Liverpool:		
Robert Badenhop.....	4,100	
JULY 3.—By the <i>Celtic</i> =Liverpool:		
James T. Johnstone.....	9,000	
JULY 5.—By the <i>Gothland</i> =Antwerp:		
A. T. Morse & Co.....	65,000	
Poel & Arnold.....	25,500	
Robinson & Co.....	29,000	
Rubber Trading Co.....	11,000	118,500
JULY 8.—By the <i>America</i> =Hamburg:		
George A. Alden & Co.....	56,000	
A. T. Morse & Co.....	22,500	
Robert Badenhop.....	11,500	
Wallace L. Gough Co.....	6,500	
Poel & Arnold.....	8,000	
Rubber Trading Co.....	5,000	109,500
JULY 10.—By the <i>Lapland</i> =Antwerp:		
A. T. Morse & Co.....	45,000	
Wallace L. Gough Co.....	25,500	
Robert Badenhop.....	11,500	
Poel & Arnold.....	13,500	
William H. Stiles.....	4,500	97,100
JULY 10.—By the <i>Schwarzburg</i> =Hamburg:		
Wallace L. Gough Co.....	22,500	
George A. Alden & Co.....	22,500	
Robert Badenhop.....	12,000	57,000
JULY 12.—By the <i>Oceanic</i> =London:		
Robinson & Co.....	11,500	
JULY 15.—By the <i>Florida</i> =Havre:		
A. T. Morse & Co.....	100,000	
JULY 17.—By the <i>President Grant</i> =Hamburg:		
Poel & Arnold.....	7,000	
General Rubber Co.....	7,000	
Robert Badenhop.....	1,000	15,000
JULY 17.—By the <i>New York</i> =London:		
A. T. Morse & Co.....	56,000	
Muller, Schall & Co.....	7,000	63,000
JULY 17.—By the <i>Cedric</i> =Liverpool:		
Geo. A. Alden & Co.....	45,000	
J. T. Johnstone.....	22,500	
General Rubber Co.....	5,500	
Rubber Trading Co.....	7,000	
W. L. Gough Co.....	4,500	84,500
JULY 18.—By the <i>Kronland</i> =Antwerp:		
A. T. Morse & Co.....	7,000	
William H. Stiles.....	6,500	
A. W. Brunn.....	5,000	18,500
JULY 22.—By the <i>Campania</i> =Liverpool:		
Poel & Arnold.....	7,000	
JULY 22.—By the <i>St. Paul</i> =London:		
Robert Badenhop.....	3,000	
JULY 24.—By the <i>Baltic</i> =Liverpool:		
Poel & Arnold.....	22,500	
J. T. Johnstone.....	5,500	
A. W. Brunn.....	3,500	31,500
JULY 24.—By the <i>St. Paul</i> =London:		
George A. Alden & Co.....	4,500	
A. T. Morse & Co.....	25,000	
Rubber Trading Co.....	3,500	33,000

JULY 24.—By the <i>President Lincoln</i> =Hamburg:		
A. T. Morse & Co.....	40,000	
George A. Alden & Co.....	35,000	
Poel & Arnold.....	34,000	
Wallace L. Gough Co.....	3,000	
Robert Badenhop.....	15,000	
Rubber Trading Co.....	5,500	
General Rubber Co.....	3,500	
James T. Johnstone.....	3,000	156,000
EAST INDIAN.		
[*Denotes plantation rubber.]		
JUNE 24.—By the <i>Almora</i> =Colombo:		
A. T. Morse & Co.....	13,500	
Thomsen & Co.....	4,500	
James T. Johnstone.....	1,500	19,500
JUNE 27.—By the <i>Minnehaha</i> =London:		
Poel & Arnold.....	30,000	
Ed. Maurer.....	13,500	
New York Commercial Co.....	7,000	
Earle Brothers.....	3,500	
Raw Products Co.....	4,500	
Wallace L. Gough Co.....	5,500	64,000
JUNE 28.—By the <i>Caronia</i> =Liverpool:		
William H. Stiles.....	13,500	
New York Commercial Co.....	16,000	29,500
JUNE 29.—By the <i>St. Paul</i> =London:		
Poel & Arnold.....	30,000	
New York Commercial Co.....	9,000	
Ed. Maurer.....	20,000	59,000
JUNE 30.—By the <i>Finland</i> =Antwerp:		
A. T. Morse & Co.....	45,000	
JULY 3.—By the <i>Philadelphia</i> =London:		
Poel & Arnold.....	33,500	
Henderson & Korn.....	9,000	
W. H. Stiles.....	2,500	
Poel & Arnold.....	8,000	53,000
JULY 5.—By the <i>Trifels</i> =Colombo:		
A. T. Morse & Co.....	40,000	
New York Commercial Co.....	22,500	
Poel & Arnold.....	10,000	72,500
JULY 5.—By the <i>Gothland</i> =Antwerp:		
A. T. Morse & Co.....	50,000	
Rubber Trading Co.....	5,000	55,000
JULY 7.—By the <i>Adriatic</i> =London:		
A. T. Morse & Co.....	13,500	
Poel & Arnold.....	11,000	
New York Commercial Co.....	8,000	32,500
JULY 7.—By the <i>Minneapolis</i> =London:		
New York Commercial Co.....	30,000	
A. T. Morse & Co.....	7,000	
James T. Johnstone.....	5,500	
Ed. Maurer.....	5,000	
Poel & Arnold.....	5,500	53,000
JULY 8.—By the <i>Kennebec</i> =Singapore:		
Ed. Maurer.....	7,000	
O. Isenstein Co.....	2,500	
Manhattan Rubber Mfg. Co.....	13,500	
Haebler & Co.....	22,500	
Ed. Maurer.....	22,500	68,000
JULY 10.—By the <i>St. Louis</i> =London:		
New York Commercial Co.....	11,000	
JULY 10.—By the <i>Lapland</i> =Antwerp:		
A. T. Morse & Co.....	38,000	
JULY 12.—By the <i>Oceanic</i> =London:		
Poel & Arnold.....	25,000	
JULY 14.—By the <i>Minnetonka</i> =London:		
A. T. Morse & Co.....	67,000	
Poel & Arnold.....	25,000	
Ed. Maurer.....	11,500	
Robinson & Co.....	9,000	
James T. Johnstone.....	3,500	116,000
JULY 17.—By the <i>Cedric</i> =Liverpool:		
William H. Stiles.....	22,500	
Ed. Maurer.....	22,500	45,000
JULY 17.—By the <i>New York</i> =London:		
New York Commercial Co.....	40,000	
Poel & Arnold.....	22,500	62,500
JULY 19.—By the <i>Minnehaha</i> =London:		
Poel & Arnold.....	30,000	
James T. Johnstone.....	11,000	
A. T. Morse & Co.....	6,000	
Robinson & Co.....	7,000	54,000
JULY 19.—By the <i>Olympic</i> =London:		
New York Commercial Co.....	30,000	
Poel & Arnold.....	30,000	
Rubber Trading Co.....	3,500	63,500
JULY 22.—By the <i>Campania</i> =Liverpool:		
William H. Stiles.....	11,500	
JULY 24.—By the <i>Minnetonka</i> =London:		
A. T. Morse & Co.....	37,000	
Wallace L. Gough Co.....	5,500	42,500

JUNE 30.—By the <i>Colon</i> =Colon:		
G. Amsinck & Co.....	1,500	
Ed. Maurer.....	1,000	
Demarest Bros. & Co.....	1,000	
A. Rosenthal & Sons.....	2,000	
Pablo Calvert & Co.....	1,000	
James T. Johnstone.....	1,000	1,000
JUNE 30.—By the <i>Matanzas</i> =Tampico:		
N. Y. Commercial Co.....	*100,000	
Ed. Maurer.....	5,000	
For Antwerp.....	*5,000	*170,000
JULY 13.—By the <i>El Valle</i> =Galveston:		
Continental-Mexican Rubber Co.....	*85,000	
JULY 15.—By the <i>Matanzas</i> =Vera Cruz:		
General Export Co.....	2,500	
H. Marquardt & Co.....	1,500	6,000
JULY 15.—By the <i>El Mundo</i> =Galveston:		
Continental-Mexican Rubber Co.....	*80,000	
Charles T. Wilson.....	*13,500	*93,500
JULY 15.—By the <i>Protens</i> =New Orleans:		
A. T. Morse & Co.....	2,500	
Manhattan Rubber Mfg. Co.....	1,500	
Eggers & Hemlen.....	1,000	5,000
JULY 17.—By the <i>El Occidente</i> =Galveston:		
Continental-Mexican Rubber Co.....	*75,000	
JULY 18.—By the <i>Matanzas</i> =New Orleans:		
George A. Alden & Co.....	3,500	
Eggers & Hemlen.....	2,500	6,000
JULY 19.—By the <i>Elance</i> =Colon:		
G. Amsinck & Co.....	8,000	
Demarest Bros. & Co.....	3,000	
Piza, Nephews & Co.....	3,000	
A. Jaranillo & Co.....	3,000	
Pablo Calvert & Co.....	2,000	
United Fruit Co.....	2,000	
Mecke & Co.....	1,000	
Isaac Brandon & Bros.....	1,000	23,000
JULY 20.—By the <i>Rodney</i> =Bahia:		
Poel & Arnold.....	11,000	
JULY 21.—By the <i>Plata</i> =Colombia:		
J. Sambrada & Co.....	6,000	
Suzarte & Whitely.....	5,500	
Robinson & Van Sickle.....	1,500	
Caballero & Blanco.....	1,500	
A. Held.....	1,500	
Isaac Brandon & Bros.....	1,000	14,000
JULY 22.—By the <i>Yumuri</i> =Tampico:		
Ed. Maurer.....	*67,000	
L. W. Wilson & Co.....	15,000	
For Europe.....	*20,000	*102,000
JULY 22.—By the <i>Mexico</i> =Vera Cruz:		
American Trading Co.....	1,500	
International Products Co.....	1,000	
A. Klipstein & Co.....	1,000	
V. Cairro & Co.....	1,000	4,500
JULY 22.—By the <i>El Occidente</i> =Galveston:		
Continental-Mexican Rubber Co.....	*75,000	
Charles T. Wilson.....	*20,000	*95,000
JULY 24.—By the <i>Vigilante</i> =Tampico:		
Ed. Maurer.....	*100,000	
Poel & Arnold.....	*22,500	
For Europe.....	*85,000	*207,500
JULY 24.—By the <i>Tennyson</i> =Bahia:		
A. Castra & Co.....	45,000	
Poel & Arnold.....	22,500	67,500
JULY 25.—By the <i>Colon</i> =Colon:		
G. Amsinck & Co.....	15,000	
Charles E. Griffin.....	3,000	
Isaac Brandon & Bros.....	1,500	
Jose Julia & Co.....	1,000	20,500

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Venezuelan Block Balata

Ceylon Plantation Rubber

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NEW YORK

JULY 24.—By the <i>St. Paul</i> —London:			
Poel & Arnold	22,500		
New York Commercial Co.	13,500		
Poel & Arnold	15,000	51,000	

JULY 24.—By the <i>Munster Castle</i> —Singapore:			
Ed. Maurer	25,000		
Poel & Arnold	22,500		
L. Littlejohn & Co.	5,500		
Wallace L. Gough Co.	4,500	57,500	

JULY 24.—By the <i>Royal Prince</i> —Colombo:			
A. T. Morse & Co.	40,000		
New York Commercial Co.	22,500		
Thomsen & Co.	7,000		
James T. Johnstone	4,500		
Poel & Arnold	4,500	78,500	

GUTTA-JELUTONG.

JULY 5.—By the <i>Montrose</i> —Singapore:			
L. Littlejohn & Co.	600,000		
Haebler & Co.	450,000		
Wallace L. Gough Co.	250,000		
George A. Alden & Co.	120,000		
A. W. Brunn	25,000	1,445,000	

JULY 8.—By the <i>Kennel</i> —Singapore:			
L. Littlejohn & Co.	350,000		
Haebler & Co.	225,000		
Wallace L. Gough Co.	110,000		
George A. Alden & Co.	50,000		
Continental Rubber Co.	8,000	743,000	

JULY 24.—By the <i>Munster Castle</i> —Singapore:			
L. Littlejohn & Co.	350,000		
Wallace L. Gough Co.	125,000		
Haebler & Co.	100,000	575,000	

GUTTA-PERCHA.

JULY 5.—By the <i>Montrose</i> —Singapore:			
George A. Alden & Co.	22,500		

JULY 8.—By the <i>Kennel</i> —Singapore:			
Haebler & Co.	22,500		
Poel & Arnold	11,000	33,500	

JULY 8.—By the <i>Amerika</i> —Hamburg:			
Robert Soltan & Co.	15,000		

JULY 19.—By the <i>Olympia</i> —London:			
Wallace L. Gough Co.	20,000		

BALATA.

JUNE 27.—By the <i>Munster Castle</i> —London:			
R. & J. Dick, Limited	9,000		

JUNE 28.—By the <i>Cyprien</i> —Trinidad:			
Ed. Maurer	5,000		
Suzarte & Whitney	6,000	11,000	

JULY 3.—By the <i>Capt. Grenada</i> —Trinidad:			
Schutte, Bunemann & Co.	17,500		
Ed. Maurer	13,000		
Middleton & Co.	5,000	35,500	

JULY 11.—By the <i>Saramaca</i> —Trinidad:			
G. Amsinck & Co.	11,500		
Middleton & Co.	8,000		
Scholtz & Marturet	5,500		
Ed. Maurer	3,500	28,500	

JULY 18.—By the <i>Marowijne</i> —Paramaribo:			
Ed. Maurer	15,000		
Middleton & Co.	9,000	24,000	

JULY 21.—By the <i>Grenadyl</i> —Rotterdam:			
Earle Brothers	11,500		

JULY 21.—By the <i>Navarre</i> —Trinidad:			
American Trading Co.	5,500		
George A. Alden & Co.	2,500	8,000	

BOSTON ARRIVALS.

JUNE 2.—By the <i>Glaizer</i> —Singapore:	
L. Littlejohn & Co. (Jelutong)	210,000

JUNE 6.—By the <i>Canadian</i> —Liverpool:	
Wallace L. Gough Co. (Fine)	6,500

JUNE 10.—By the <i>Serica</i> —Singapore:	
State Rubber Co. (Ceylon)	4,500

JUNE 13.—By the <i>Serica</i> —Singapore:	
State Rubber Co. (Jelutong)	107,000

JUNE 17.—By the <i>Hampshire</i> —Liverpool:	
George A. Alden & Co. (African)	5,600

CUSTOM HOUSE STATISTICS.

PORT OF NEW YORK, JUNE.

Imports:	Pounds.	Value.
India-rubber	6,283,783	\$5,477,466
Balata	134,456	106,084
Gutta-percha	311,314	52,529
Gutta-Jelutong (Pontianak)	6,574,856	371,094
Guayule	373,922	147,478
Total	13,678,331	\$6,154,651

Exports:	Pounds.	Value.
India-rubber	61,156	\$44,610
Balata	11,226	9,076
Gutta-percha	4,951	427
Guayule	5,057	1,914
Reclaimed rubber	43,403	6,546
Rubber scrap, imported	1,438,666	\$119,109
Rubber scrap, exported	365,441	56,063

PARA EXPORTS OF INDIA-RUBBER, MAY, 1911 (IN KILOGRAMS).

EXPORTERS.	NEW YORK.					EUROPE.					TOTAL.
	Fine.	Medium.	Coarse.	Caucho.	TOTAL.	Fine.	Medium.	Coarse.	Caucho.	TOTAL.	
Gruner & Co.	66,337	25,538	187,611	16,202	295,688	211,543	32,740	24,710	156,380	425,373	721,061
Adelbert H. Alden, Ltd.	62,787	10,517	53,946	28,518	155,768	2,777	511	11,022	5,610	19,920	175,688
R. O. Ahlers & Co.	38		180	2,648	2,866	50,947		11,984	12,699	75,630	78,496
De Lagotellerie & Co.	19,380	5,440	31,680		56,500	21,420				21,420	77,920
Suarez Hermanos & Co.						31,951	1,197	10,754	21,329	65,231	65,231
Pires Teixeira & Co.	20,400	170	9,240		29,810	13,040		16,120		29,160	58,970
The Alves Braga Rubber Estates and Trading Co., Ltd.	26,762	595	362	60	27,779						27,779
A. de la Riviere & Co.			2,310		2,310	12,799	680	5,563	2,016	21,058	23,368
Gordon & Co.						12,352	1,087	356	3,603	17,398	17,398
J. Marques	81	60	5,386	123	5,650						5,650
Guilherme Aug. de Miranda Filho.						3,060		660		3,720	3,720
Sundries	2,720	170	28,710		31,600	8,500	1,020	60		10,180	41,780
Itacoatiara, direct						800	160	640	160	1,760	1,760
Manaos, direct	158,874	29,421	115,363	103,375	407,033	370,030	76,579	87,289	269,618	803,516	1,210,549
Iquitos, direct						53,924	3,054	15,951	160,483	233,412	233,412
Total, May, 1911	357,379	71,911	434,788	150,926	1,015,004	793,143	117,028	185,709	631,898	1,727,778	2,742,782
Total, April, 1911	389,417	99,628	352,154	287,232	1,128,431	823,960	114,300	185,785	589,224	1,713,269	2,841,706
Total, March, 1911	268,926	71,692	283,502	76,499	700,619	1,349,885	176,348	399,138	551,188	2,476,559	3,177,178
Total, February, 1911	462,123	111,594	454,235	113,921	1,141,873	1,477,804	201,533	330,181	608,595	2,618,113	3,759,986
Total, January, 1911	728,494	157,522	563,542	245,226	1,694,784	884,484	117,265	123,838	287,438	1,413,025	3,107,809

PARA AND MANAOS INDIA-RUBBER EXPORTS FIRST HALF OF 1910 (IN KILOGRAMS.)

EXPORTERS.	UNITED STATES.					EUROPE.					TOTAL.
	Fine.	Medium.	Coarse.	Caucho.	TOTAL.	Fine.	Medium.	Coarse.	Caucho.	TOTAL.	
Gruner & Co.—Pará											
Dusendschön, Zarges & Co.	1,070,288	320,479	1,107,435	434,694	2,932,896	1,881,214	196,955	294,819	1,238,265	3,611,253	6,720,149
—Manaos											
Ad. H. Alden, Ltd.—Pará-Manaos	502,039	112,463	357,440	282,689	1,254,631	511,867	157,178	177,460	228,278	1,074,783	2,373,414
Scholz, Hartje & Co.—Pará											
Scholz & Co.—Manaos	327,062	53,971	160,119	183,064	723,216	623,762	103,540	181,823	408,400	1,317,525	2,040,741
Gordon & Co.—Pará-Manaos	76,104	16,900	20,476	6,374	119,854	568,670	121,095	195,779	356,854	1,242,398	1,386,252
E. Pinto Alves & Co.—Pará	201,646	10,076	420,707	40,197	672,626	302,813	36,569	59,688	62,373	461,443	1,134,069
J. Marques—Pará-Manaos	128,210	44,964	56,555	6,830	236,559	512,177	103,563	102,633	18,472	736,845	973,404
Suarez Hermanos & Co., Ltd.—Pará						558,299	8,297	51,696	153,165	771,457	771,457
R. O. Ahlers & Co.—Pará											
Ahlers & Co.—Manaos	15,180		8,352	69,111	92,643	147,517		29,668	49,267	226,451	325,095
De Lagotellerie & Co.—Pará	42,840	11,560	93,060		147,460	44,030	340	5,610	58,740	108,720	286,180
Pires Teixeira & Co.—Pará	51,850	510	62,040	330	114,730	94,811	315	43,395	154	138,675	253,405
Mello & Co.—Pará-Manaos			10,162	1,125	11,287	95,310	24,497	7,953	29,187	156,947	168,234
The Alves Braga Rubber Estates and Trading Co., Ltd.—Pará	75,738	8,376	12,235	733	97,082						97,082
J. G. Araújo—Manaos						39,190	8,003	29,549	1,066	77,808	77,808
A. de la Riviere & Co.—Pará	4,590	510	3,960		9,060	39,209	3,152	23,574	2,016	67,951	77,011
E. Kingdom & Co.—Manaos						21,600		8,560	3,920	34,080	34,080
Guilherme Augusto de Miranda Filho—Pará	15,390	2,228	624		18,242	5,086	690	2,090	129	7,995	26,237
S. A. Armazens Andresen—Manaos						12,405	2,286	8,372		23,063	23,063
Gunzburger & Co.—Manaos	288	190	584	3,645	4,707	2,504	208	322		3,034	7,741
Braga Sobrinho & Co.—Pará						4,305	437	296		5,038	5,038
Sundries	2,720	170	32,670		35,560	103,281	8,893	51,325	75,559	239,058	274,618
Itacoatiara, direct						26,180	3,007	19,027	1,673	49,887	49,887
Iquitos, direct	71,301	8,740	29,716	16,378	126,135	284,921	24,401	105,789	499,982	915,093	1,041,228
Stock in 1st hands—Pará											1,343,000
Stock held by Syndicate J. Marquez											2,760,000
On board S. S. <i>Amazonense</i>											140,000
Total	2,585,246	590,137	2,376,135	1,045,170	6,596,688	5,879,151	803,426	1,399,428	3,187,500	11,269,505	24,389,193



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AUGUST 1, 1911.

No. 5.

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Antwerp.

RUBBER STATISTICS FOR JUNE.					
DETAIL	1911.	1910.	1909.	1908.	1907.
Stocks, May 31, 1911	614,010	543,863	689,238	771,577	752,914
Arrivals in June	426,992	425,601	430,074	461,063	296,779
Congo sorts	382,972	356,288	273,079	397,745	256,350
Other sorts	44,020	69,313	156,995	63,318	40,429
Aggregating	1,041,002	969,464	1,119,312	1,232,640	1,049,693
Sales in June	267,025	508,947	642,892	547,774	377,900
Stocks, June 30	733,977	460,517	476,420	684,866	671,793
Arrivals since Jan. 1.	2,221,022	2,085,208	2,403,504	2,605,825	2,578,734
Congo sorts	1,642,593	1,655,626	1,716,209	2,257,536	2,194,578
Other sorts	578,429	429,582	687,295	348,289	384,156
Sales since Jan. 1.	2,035,257	2,166,203	2,522,819	2,927,853	2,565,125

RUBBER ARRIVALS FROM THE CONGO.

JUNE 22.—By the steamer *Leopoldville*:

Bunge & Co.	(Société Générale Africaine)	kilos	72,700
Do	(Chemins de fer Grands Lacs)		4,000
Do	(Société Abir)		750
Do	(Belgika)		800
Do	(Comptoir Commercial Congolais)		32,500
Société Coloniale Anversoise	(Cie. du Lomami)		4,000
Do	(Cie. du Kasai)		71,500
L. & W. Van de Velde			12,000
Charles Dethier	(Société Comm. and Minière du Congo)		1,150
Congo Trading Co.			1,400 241,600

JULY 13.—By the steamer *Bruxellesvilles*

Bunge & Co.	(Société Générale Africaine)	kilos	108,700
Do	(Chemins de fer Grands Lacs)		5,100
Société Coloniale Anversoise	(Belge du Haut Congo)		1,600
Do	(Cie. franc du Haut Congo)		8,000
Do	(Cie. du Lomami)		10,200
L. & W. Van de Velde	(Cie. du Kasai)		88,500
Do	(Société Com. and Financ. Africaine)		8,500
Do			6,500 237,100

Amsterdam.

F. JOOSTER reports [July 7]:

The market remained firm, but no business took place as owners are asking above market value. Fresh arrivals could not be discharged, owing to the strike and consequently the quantities offered in this tender sale of 21st instant is smaller than it ought to have been.

F. JOOSTEN reports [July 21]:

Today's tender sale met with strong competition again, especially for the Hevea lots, for which high prices were paid, all above foreign parity, and in some instances as much as fully 10 per cent. above valuations. But of the total of about 19,800 kiles, 10,000 kiles were sold, whilst the unsold lots mostly were held at prohibitive prices, owners anticipating an advance.

Rubber Scrap Prices.

LATE NEW YORK quotations—prices paid by consumers for carload lots, per pound—are practically unchanged.

	July 1.	August 1.
Old rubber boots and shoes—domestic	87½¢ 9	9 ¢ 918
Old rubber boots and shoes—foreign	9 ¢ 918	9 ¢ 918
Pneumatic bicycle tires	41½¢ 43½	41½¢ 43½
Automobile tires	83½¢ 85½	83½¢ 85½
Solid rubber wagon and carriage tires	91¼¢ 93¼	91¼¢ 93¼
White trimmed rubber	11 ¢ 11½	11 ¢ 11½
Heavy black rubber	43¼¢ 5	43¼¢ 5
Air brake hose	41½¢ 43¼	41½¢ 43¼
Garden hose	13¼¢ 178	13¼¢ 178
Fire and large hose	23½¢ 258	23½¢ 258
Matting	78¢ 1	78¢ 1

GUTTA-PERCHA EXPORTS FROM THE PHILIPPINE ISLANDS.

OFFICIAL trade returns of the Bureau of Customs show the following exports of gutta-percha from the Philippine Islands during the fiscal years 1905 to 1910, inclusive:

Fiscal Year	Quantity Kilos	Value U. S. Currency
1905	6,568	\$ 1,381
1906	67,596	18,123
1907	120,404	32,125
1908	88,438	14,981
1909	41,090	9,147
1910	95,082	31,903

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INDIA RUBBER WORLD

CAOUTCHOUC

HEVEA BRASILIENSIS

DIOPHOS GUTTA

GUTTA-PERCHA

Edited by HENRY C. PEARSON—Offices, No. 15 West 38th Street, NEW YORK.

Vol. XLIV. No. 6.

SEPTEMBER 1, 1911.

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 The Merchants Rubber Co., Limited, Berlin, Ont.
 The Berlin Rubber Manufacturing Co., Limited, Berlin, Ont.
 The Maple Leaf Rubber Co., Limited, Port Dalhousie, Ont.
 Dominion Rubber Co., Limited, St. Jerome, P. Q.

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No. 15 West 38th Street, New York.

CABLE ADDRESS: IRWORLD, NEW YORK.

HENRY C. PEARSON, Editor

Vol. 44.

SEPTEMBER 1, 1911.

No. 6

SUBSCRIPTIONS: \$3.00 per year, \$1.75 for six months, postpaid, for the United States and dependencies and Mexico. To the Dominion of Canada and all other countries, \$3.50 (or equivalent funds) per year, postpaid.

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REMITTANCES: Should always be made by bank or draft, Postoffice or Express money orders on New York, payable to THE INDIA RUBBER PUBLISHING COMPANY. Remittances for foreign subscriptions should be sent by International Postal Order, payable as above.

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Entered at New York postoffice as mail matter of the second class.

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WILL PRICES EVER BE STABLE?

THE price of crude rubber, present and future, is more interesting to the trade than any other topic. To manufacturer, planter, importer, broker, whether he be located in Montreal or Montevideo, Penang or Paterson, Manchester or Melbourne, Akron or Aden, the question is paramount. Who makes the prices when they are made? Whether or not the law of supply and demand is more potent than speculative influence? is beside the question if only there were any degree of certainty about either the ups or the downs. Two dollar rubber, even three dollar rubber, does not matter if only it persist for a reasonable period. The present comparatively low price of rubber can be of no advantage to the manufacturer for a long time to come. A year of rubber at \$1.08 to \$1.15 would be none too long to enable makers of rubber goods to adjust their prices after a period of \$3 rubber. The price is immaterial if only it be somewhere near permanent. When one remembers that in 1902 the

price of upriver fine was 76 cents, that three years later its average was 52 cents higher, that still three years later it had dropped off 30 cents, that two years later still it jumped \$2.24 higher than in 1902, and then sagged back some \$2 a pound, it will be seen that buyers were perforce speculators.

The Amazonian producers do not want this sort of uncertainty. It is exceedingly hard on the industry there for them to see \$3 rubber for a time and be practically millionaires and then \$1 rubber and be "broke." No one can blame them for trying to corral the surplus that at least \$1.50 be realized. Nor, were they able to insure that price for, say, five years, would there be the slightest objection on the part of the rubber manufacturers.

It would, at first blush, seem as if Brazil's opportunity would be when rubber was high and there was plenty of money. Such is human nature, however, that the reverse is true. It is catastrophies that bring out what is in man or people. The low price of rubber, the necessity for increased revenue will be the spur that will urge Brazilian rubber producers to improved business methods, lower first costs, planting, etc., that they may compete with the rest of the rubber producing world.

THE RUBBER MARKET CHANGING.

THAT the marketing of crude rubber is likely to undergo notable changes in the next few years will hardly be disputed except by those who desire no change.

Plantation rubber in thousands of tons, free from sand, bark, mud, stones and water has started the whole wild rubber world toward the production of gum equally clean, equally dry.

Time was when no rubber manufacturer would accept washed crude rubber. He feared, and sometimes justly, mixtures of less valuable sorts, difficult of recognition except in the cure. Washed rubbers are today used everywhere, and the user finds that they are not as likely to be adulterated as are the wild sorts.

In this evolutionary period, when crude rubber is gradually working up to higher and more stable levels, it is perhaps possible that American listing on a stock exchange is in the line of real progress. However that may be, the story of the Produce Exchange by its able president and the views of some rubber manufacturers in another column, cannot fail to be of more than ordinary interest.

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RUBBER INVESTORS FRIGHTENED.

MANY conditions are conspiring to fill with fear the hearts of European investors in rubber plantation stocks.

Foremost is the exasperating way in which the price of crude rubber clings to the dollar level, nor does the fact that rubber planting is extremely profitable, even at this low price, abate their fears.

Then there is synthetic rubber, not rumors of it, but actual exhibitions of process and product, by men who must be taken seriously. So it happens that many are selling out even at a loss. Those who cannot find a market at satisfactory prices are beginning a campaign of inquiry and criticism. For the first time they wish more light upon plantation expenditures of every sort. They studiously compare production returns for Ceylon, the Malay States and Java; they write letters of complaint, of advice, and the banner companies, as Vallambrosa, continue paying almost unbelievably big dividends.

SYNTHETIC RUBBER EFFECTS.

THE bugaboo of the rubber planter, synthetic rubber, has arrived at last, not as a fearsome dream, but as an actuality. Two companies with laboratories in England produce it at will. Not in ton lots, to be sure, and not of the quality of up river fine, but real rubber nevertheless and at a cost, if their figures are correct, that points to commercial possibilities.

It had always been supposed that such a discovery would immediately put millions into the pockets of the discoverers, and put out of business those who gather from nature's sources. There is no indication that either happening is imminent. It will be a long time, under the most favorable circumstances, before the laboratories can be turned into factories, and a production say as great as that of guayule is reached. Or supposing within one or two years such amount were marketable, would it not be absorbed with ease as were guayule, the higher grades of reclaimed rubber, and the mineral plastics, and would not the only marked effect be a steadying of the market? Furthermore, the pioneers in extracting and treating guayule, pontianak and in high grade reclaiming, found that the well-equipped laboratories in the big rubber mills the world over were extracting, treating and reclaiming by methods imitative or original, and that some kept pace with them in production. Is it not possible that the same alert manufacturers are already making isoprene, and that one day a plant for synthetic rubber

production will be as common an adjunct to a rubber factory as the present reclaiming plant? Were this accomplished, its effect would not be to kill the business of rubber gathering, wild or planted. Reclaiming for the trade is neither killed nor handicapped by the individual reclaiming plants. If synthetic rubber enters the market it will be quietly, gradually, and with no apparent effect upon existing conditions.

NOLO CONTENDERE, \$1,000. JACKSON, NIHIL.

IN THE year 1900 there appeared in trade circles a man by the name of Jackson. Or, to be exact, he did not appear except at intervals, and then only to a selected few. He had, so it is to be assumed, improved upon the old time trade associations with their "gentlemen's agreements" by evolving "pools." According to rumor, he formed hundreds of them, pooling every sort of production from soap to suspension bridges. There was much mystery in his method of work, in the terms of agreement, and in the personnel of those whom he pooled. He had modest offices in New York, and except to those with whom he was doing business had little to say of an informing nature. To what extent his pooling operations reached no one knows. As far as the rubber trade is concerned he seems to have brought the most important of the insulated wire concerns into agreement. It is said that their pool ceased to exist some time ago, but the Federal government, nevertheless cited those concerned to court and on a general plea of *nolo contendere* fined each individual all the way from \$1,000 up. Jackson, of whose fertile brain the pool was born, is said to be in Europe. They fined the rubber men, but cannot find Jackson.

LESSONS FROM RUBBER MILL FIRES.

THE July Quarterly of the National Fire Protection Association records two recent fires in rubber manufacturing establishments. In one case the fire had started in a rubber spreader, and had steadily extended all over the machine, causing a great deal of heat and dense smoke. Thirteen sprinklers opened, the principal damage being to balloon and aero cloth in process in the spreader room. Among the recommendations based on the facts, it is remarked that ample floor drainage is important in rooms where volatile liquids are used. In this case the water seems to have been quickly carried outside the building, owing to ample drainage.

In another case a fire occurred under a large bench forty feet in length, underneath which were a few paints and oils, and oily waste or rags (as well as probably some dirty overalls). Fifteen sprinklers opened and held the fire entirely under the bench.

LOOKING AHEAD.

AFTER conference with the managers of selling branches in all parts of the country, the president of one of the leading motor car manufacturing and vending combinations in the United States, expresses his opinion that next year's demand for automobiles will require the manufacture of not less than 210,000 power vehicles, for pleasure and light business purposes, apart from motor trucks, and that 60 per cent. of these vehicles will be for utility purposes, with a distinct advance in the number of lower priced cars sold for business and pleasure uses.

This—unless some genius comes to the front with a practical substitute—means a material increase in the demand for the hitherto indispensable rubber tire.

That the manufacturers propose to be prepared to meet it, will be apparent from the frequent reports in the columns of the INDIA RUBBER WORLD, of extensive additions to their producing facilities, made by the leading tire manufacturers.

For this important branch of the rubber manufacturing trade, future prospects, for some time to come, may therefore be regarded as satisfactory—provided the figure on which this prognosis is based, is reasonably near the mark.

EFFICIENCY AND OIL.

THE efficiency expert is abroad in the land. He tells how to turn out 100 feet of hose where one is now turning out only 90 feet. Some of his rules are interesting, some highly ingenious, and some actually work. But here is one he has so far missed—*oil the help.*

A rubber factory of the first grade uses from 7,000 to 10,000 gallons of lubricating oil a year. That runs into dollars, but nobody begrudges a penny of it. It is the best investment in the shop, for what sort of work would a machine do without oil?

It is the same exactly with the human machine. If it is to run smoothly, turning out good work day after day without squeaking at the axles, oil it. A manufac-

turing corporation in New England, not exactly in the rubber line, but at least in the rubber territory, recently gave its employes a fine oiling. It devoted a full day to it. It employs 500 people. These were gathered together, along with the wives and children of the family men—making a regiment of 1,400 souls—put on board a commodious steamer, given a delightful sail with orchestral accompaniment, landed at a cheery resort of many attractions, and supplied with coupons covering them all. A local *restaurateur* of repute was given *carte blanche* to load them to the gunwales with all the delicacies of the seashore. Afterwards, armed with their coupons, before which all gates parted and all doors opened wide, they shot the chutes, careened around the scenic railway, roller-coasted, watched the diving belles and pirouetted over waxed floors until human capacity could ask for no more.

Later in the day they were deposited as near their own doors as the trolley could take them—fatigued, but full of a great joy and oiled up for many days and weeks of cheerful toil. That was a good piece of lubrication. It cost probably \$4,000, perhaps more, but think of the wear and tear it prevented. At any rate, these particular manufacturers must believe that it pays, for they have been doing this same thing for thirty years.

This shows one good way of keeping the human machine running smoothly and effectively. There are plenty of others, and all are in the line of added efficiency.

THE COST OF ISOPRENE.

ALTHOUGH isoprene is only an intermediate product, in the manufacture of synthetic rubber, its actual cost is one of the most essential factors in any calculation bearing upon the subject.

This aspect of the case has not been overlooked by leading chemists. Some time ago Professor (now Sir William) Tilden, Dean of the Royal College of Science, London, called attention to the fact that the yield of isoprene from turpentine is very small, probably not exceeding 10 per cent., under favorable conditions. In his experiments it had been less than that rate. His researches as to synthetic rubber, going as far back as 1882, add weight to his statements.

Upon the basis of a calculation made at the time, and taking for a starting point the present New York price of 56 cents per gallon of 7½ pounds (exactly 7.47

cents per pound), the following results would be shown:

A—1,000 pounds turpentine at 7.47 cents per pound, \$74.76. Yield 100 pounds isoprene. Cost of isoprene, 74.7 cents per pound.

According to the somewhat higher estimate of a 15 per cent. yield, claimed by an English company, there would be a relatively lower cost:

B—1,000 pounds turpentine at 7.47 cents per pound, \$74.70; yield 150 pounds isoprene; cost of isoprene, 49.8 cents per pound.

These results would have to be increased by the expense of bringing the raw material to the stage of intermediate product, and would, on the other hand, be subject to a diminution representing the proceeds of the by-product obtained up to that stage.

Upon these two vital points estimates and calculations will doubtless be submitted in due time, but in view of the prospective yield from turpentine being admittedly only 10 to 15 per cent. of isoprene, the results, as thus indicated, will form a more or less reliable point of departure for more ample investigation.

BELGIAN PROMISES FULFILLED.

AMONG the notable instances of modern progress is that made by the Congo since the Belgians as a nation have shaped its destinies.

The collector of rubber at all times formed an important element in the prosperity of the Congo Free State. In fact, that country has been regarded as having created the African rubber industry, for before its foundation, the natives of Africa hardly knew the existence of the rubber vine, or were unaware of its value.

The earliest record of rubber shipments from the Congo dates from 1887, when the total export was only 200,000 pounds. In 1909 it represented 9,000,000 pounds; this fact affording a convincing proof of the business policy, which has guided the administration of the country.

Intimately connected with this progress is the more systematic cultivation and collection of rubber, which had previously been looted from African forests in a quantity insufficient to attract capital. In the successful efforts made to develop the natural resources of the Congo, the policy of Belgium is now to emulate the progress made in Asia, where the result has not only well repaid the

European promoters and managers, but has at the same time, brought comfort and welfare to the natives who supply the labor. It is on similar lines that Belgium has been and is acting in the Congo.

Nor is Belgian control today simply a matter of bureaucracy and officialism. On the contrary, a marked personal element is aiding in establishing the necessary good feeling. The Colony was taken over by a vote of the Belgian Parliament on November 15, 1908. During the visit to the Congo in 1909 of the future king, accompanied by M. Jules Renkin, Minister for the Colony and other officials, many detailed reforms were accomplished, and comprehensive plans of future work elaborated. Various leading Belgian public men have since visited the Colony, thus keeping in touch with its condition and prospects.

Among points of special interest affecting Congo rubber, is the fact admitted by Mr. Cuthbert Christy in his recent work, "The African Rubber Industry" that since the earliest shipments, the rubber exported from the Congo has been of a far better quality than that from the British African colonies. The special requirements of plantation rubber not being well understood, the Government has spared no expense in opening botanic gardens and commencing experimental plantations.

Regarded as the impartial testimony of an English authority Mr. Christy's comments upon present conditions are of special interest. To use his own words: "My conviction, based on two journeys in Western Congo, is that what was known as the 'Congo agitation' was exaggerated for personal and party reasons, and most people who know the Congo will, I am sure, agree with me. . . . Full credit for the state of civilization existing today in the watershed of the great river has never been given to whom it is due."

THE INDIA RUBBER WORLD has at various times since 1892 dealt with the subject of the Congo. On the occasion of its annexation by Belgium it treated the matter editorially in the issue of October 1, 1908. To what extent Belgium considers its mission is being fulfilled is told in another column.

THE ANNUAL INNER TUBE CROP.

SPEAKING of rubber reclaiming, the recovery of inner tubes for automobile tires is one of the pretty parts of the business, that is, if the reclaimer knows how to do it successfully. As a rule, they contain no fabric and no metal except the valve stem which is easily cut out. They are nearly "pure" and require no acid treat-

ment, no electrical metal gatherers, etc., etc. Moreover, thanks to the immensity of the motor business, worn-out tubes are gathered by the million. Figuring that there are 450,000 automobiles in commission in the United States and that an average of eight tubes is used a year, it would mean an annual crop of 3,600,000 tubes; say that the average weight of the tubes be two pounds each, the total weight would be 7,200,000 pounds. Reclaimed, it would give certainly 6,000,000 pounds of high-grade stock, mostly Pará, and capable of taking its place in eighty per cent. of the goods to-day manufactured.

RUBBER SIDEWALKS FIRST.

RUBBER pavements or roadways are very frequently advocated by those who have a broad knowledge of city needs, and of the lasting qualities of rubber as compared with any other paving material. The realization of such a dream is doubtless far away, that is the general adoption by the great cities of the world of rubber paving. It would undoubtedly add much to the comfort of those who ride, and be better for the horses. Those who ride, however, are in the minority and the day is not far distant when horses will not be allowed in the cities. There still remains the vast crowds that throng the sidewalks, the subways and the halls of office buildings. Their echoing footsteps on unyielding granite, marble, brick and concrete should stir humanitarians more than the aches of horses, or the pains of a few taxicab users. What the cities need is rubber sidewalks before they even consider rubber streets.

In a blind way the great corporations have already confessed to this need by covering decks of steamships and waiting rooms of depots with rubber paving. The rubber shod sidewalk is but an extension of the same idea.

HAMBURG OPINION UPON TRADING IN RUBBER FUTURES.

WHILE the introduction of organized trading in rubber futures has been advocated by prominent Hamburg banking houses, identified with copper, it has been pointed out by opponents of the project that what applies to copper does not necessarily apply to rubber. One difference is that there are so many descriptions of rubber, adapted for the most varied

technical purposes, while copper always remains only copper.

Recent local investigation at Hamburg showed that there is already a large unofficial business done at that point in rubber for future delivery, but, it is urged, this is no reason for throwing the article into the hands of professional speculators. Such proposals, it is considered, introduce a disquieting element into the business.

In various instances, the opinion was expressed, that any official system of business in futures, must correspond with actual business conditions. The apprehension has likewise been voiced, that the proposal, if carried out, would tend to injure the established reputation of Hamburg as the most steady and soundest rubber market in the world.

THE PASSING OF THE HORSE.

AT a time when the problem of New York public transportation is one of the most prominent questions of the day conditions in Paris, as lately described by Consul General Frank H. Mason, are of special interest.

By the terms of the forty years' concession granted the General Omnibus Company in June, 1910, all the horses on the 38 omnibus lines (with an aggregate length of 156 miles, and which in 1909 carried 115,061,498 passengers) are to be withdrawn from service by June 1, 1913. At the same time, the last steam or compressed-air tramcar will have been taken off, leaving but three systems of public passenger traffic—the autobus, electric tramways and the municipally built Metropolitan subway.

In place of horse-traction two styles of autobus have been adopted in which the upper story is discarded in favor of a spacious rear platform; the same total number of passengers (32 to 35) being carried as in the old "double-deckers." One of the two new models has on the rear wheels solid tires in three sections, sufficiently broad to minimize the wear and tear upon the pavements. Four hundred of the former and three hundred of the latter have been ordered, a portion of which have been in service this summer.

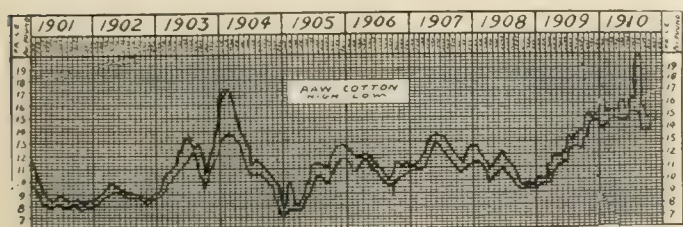
How far the adoption of autobuses will be witnessed in New York would apparently depend upon the introduction here of a model embodying the latest Paris improvements, notably the carrying of 35 passengers

without an upper deck. The latter, with its narrow and winding stairway, has been found in Europe to be inconvenient and unsafe for women and children.

Another point for consideration is that of fare. If autobuses, as in the case of those running on Fifth avenue (carrying 16 passengers below and 18 above), have to charge a ten-cent fare, then the average passenger will select one of the parallel five-cent surface car lines. Extension of Paris traveling facilities seems to be chiefly in the direction of the autobus, while in New York new subways are apparently being looked to for the solution of the problem of locomotion. Developments, and particularly results, in Paris will be watched with interest by those interested in the passenger traffic of American cities.

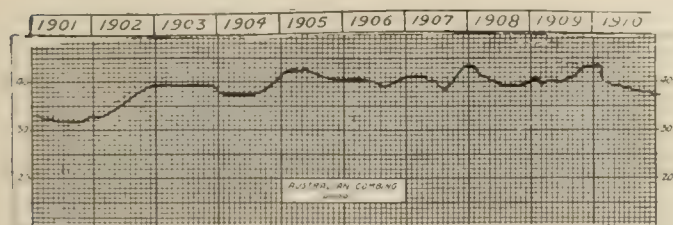
DO EXCHANGES MINIMIZE SPECULATION?

ONE of the principal arguments urged in favor of exchanges generally, and which has been quoted in favor of a rubber exchange, is the claim that such bodies minimize fluctuations in value. This conten-



FLUCTUATIONS OF RAW COTTON.

tion is disproved in the case of the most important New York exchanges. During the years 1909 and 1910 No. 2 Red Wheat rose on the New York Produce Exchange from \$1.09 to \$1.49, and then dropped to



FLUCTUATIONS OF AUSTRALIAN WOOL.

98 cents. No. 2 Red Corn has, within the last fifteen years, ranged, per bushel, from 33 to 78 cents; average price for December, 1910, having been 57 cents, against 73 cents in the preceding January; a fall of nearly 25 per cent.

Middling Upland cotton during the period from 1900 to 1910, ranged (according to Mr. Alfred B. Shepperson's "Cotton Facts") from 6.85, in 1904, to 19.75 in 1910; thus showing a fluctuation almost equalling that which, for a short time, tripled the price of rubber.

Not only have the leading exchanges failed to produce steadiness in values, but in other branches the absence of exchanges has, through the restriction of the speculative element, prevented the extreme fluctuations, which it is desired to avoid. For instance: Australian combing wool, between 1901 and 1910, fluctuated between 33 and 44 cents per pound, while, as has been shown cotton ranged from 6.85 to 19.75. These comparative fluctuations are illustrated by subjoined charts, through the courtesy of the *Textile Manufacturers' Journal*.

Wool and rubber have many points in common, notably the question of clean product, and both are, to a certain extent, influenced by London auction prices. The failure of the attempt to establish a wool exchange in New York some fifteen years ago, will still be in the memory of downtown New York merchants. The stately building at the corner of Beach street and West Broadway is all that remains of the project, which was opposed by the wool trade at large, as being detrimental and unnecessary.

THE INTEREST TAKEN IN RUBBER IN GREAT BRITAIN is easily understood when the market prices of the stocks in the various companies, based on the dividends they are paying, or are expected to pay, are considered. For instance: stock in the Selangor Company has a par value of 2 shillings (48 cents) per share, and sells at £5 (\$24.33); Pataling, with a par value of 50 cents, is quoted at \$15, and Batu Caves, par value \$5, brings \$75.

FIRE COMMISSIONER JOHNSON, of New York, has about \$750,000 available for the purchase of automobile apparatus, of which he expects to have 150 pieces within eight months. A Board has been appointed to elaborate plans for the wholesale introduction of automobile engines, in which gasoline will do away with steam pumping. Plans have been asked by the Board from manufacturers of gasoline propelled engines.

A STATISTICIAN in the United States department of agriculture has compiled a long list of articles in general use among the farmers of the country, with average prices—supplied by retail dealers—showing the advance in cost from 1899 to 1909. The prices of farm products are also compared. The net result is to show an average advance during the ten years on the articles purchased by farmers of about 12 per cent., while the purchasing power of an acre under cultivation has advanced 54 per cent. Rubber boots figure among farmers' supplies, \$3.34 being given as the average figure in 1899 and \$4.18 in 1909—the advance being 29 per cent. It might be added that whereas the average price of fine Upriver Pará rubber during 1900 was only \$1.56 per pound, it has advanced ten years later to \$2.01, or an increase of about 29 per cent.

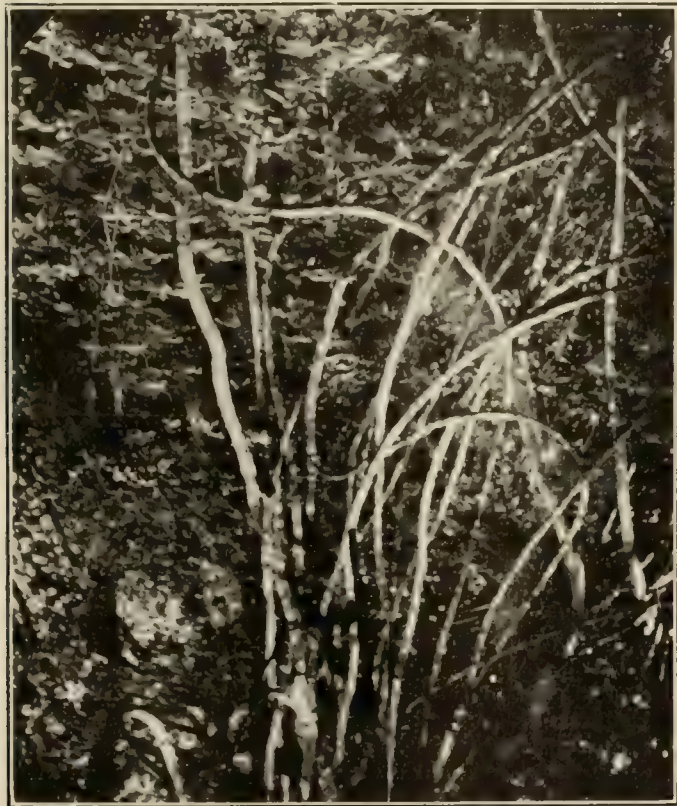
The Free Belgian Congo.

The following article, although not strictly official, is practically the Belgian government's reply to its many critics. That much in their vast territory needed reforming they admit, while the completeness of the reforms accomplished and projected are worthy of the highest praise.

TWENTY years ago the native population of Central Africa was outrageously decimated by Arab slavery, while the coast tribes were poisoned by the alcohol of the white traders. The late Congo Free State has valiantly—regardless of cost—delivered them from these two plagues under which they

Trade backed by Free Labor," and thus it was proclaimed by M. Tibbaut in his report on the first colonial budget.

The working of the estates of the realm by monopoly is totally abandoned. The native may now gather rubber freely. He has not the slightest formality to fulfil, nor the slightest



RUBBER VINES IN THE CONGO.

were perishing. But compelled, at it was, to accomplish with insignificant resources a giant's task, forced to occupy at once in all its vastness an immense territory—any part of which, left unguarded, would have become the scene of international strife—the State was forced by fate to put budget considerations foremost. But, not being backed by a metropolis, it was soon compelled, in order to obtain the necessary means, to have recourse to the natural exploitation of its territory, to collect rubber directly or through commercial companies. But, when the Congo became a Belgian colony, its metropolis being a rich country able to face the cost of organizing her new possession and determined not to stint her resources there, Belgium set out to modify a form of government which only the dire necessity of existence had established and maintained; Belgium, moreover, being essentially an industrial and exporting country, has, unlike the European countries, stood with England in its attachment to the idea of liberty in the economic realm, as in all others. Such have her ancient heritage and, her geographical position made her, and such she remains from choice and of necessity.

The basis of the method of government is from now on "Free



MAP SHOWING THE CONGO FREE STATE.

tax to pay. He only has to observe the regulations issued with the object of preventing the destruction of the latex yielding plants. He can sell the product of his labor to whom he likes, and at the market price. On the other hand, the buyer—the



TAPPING *LANDOLPHIA OWARIENSIS*.

European or foreign trader—can settle on any tract not already leased or granted. He can buy from the native the rubber he has collected; he can also collect rubber himself or have it collected

for him. He can buy crown lands to settle on, and if the amount of land he desires does not exceed 10 hectares (25 acres) in area, he can obtain it on the spot, by putting in his demand together with a rough sketch outlining the tract. The Governor General, in strong circular letters, urges the local boards to favor such applications for land, to hasten their inspection, to simplify the formalities, to receive, inform and encourage the trader or the cultivator who wishes to settle.

If he does not wish to acquire the piece of land immediately—if he wishes to investigate the resources of the district and his chances of success before settling—he can take the land on a fifteen years' lease, with the sole proviso that he occupies it himself, or by his proxy, and that he carries on effectively his trade or industry.

The price of land is generally 20 cents per square yard within the town limits; outside, the price is \$200 per hectare (2½ acres) for land intended for trading posts, and from \$2 to \$5 per hectare, according to location for agricultural lands. The rent is 5 per cent. of the value of the ground.

The native, although free to harvest, is no longer obliged to do so. The tax paid in produce is abolished, as well as that paid in food. The government buys for cash all the produce required. The agents are no longer revictualled; they receive a food indemnity, and they must pay in cash for the foodstuffs which the natives bring them freely. There is, therefore, no more forced collection of rubber, nor forced supply of food; and there is no

suspended; but money is spreading more rapidly and easily than one would have thought. The government, since the annexation, has introduced over \$2,000,000 in money. Private individuals, certain companies, and the banks which have been established, have also introduced large amounts, and the natives have soon learned to use it. The new tax, therefore, is easily paid. The old direct and personal taxes have been replaced by one principal tax, which is from one-third to one-half what it formerly was, varying from \$1 to \$2.40, according to the districts, and



NATIVE DECORTICATING GRASS RUBBER ROOTS.



NATIVE WITH GRASS RUBBER ROOTS.

more enforced toil for even the most urgent public works. Since the annexation, all the laborers in the railway yards have been freed and are now engaged of their own free will for a three years' term. They receive their pay in cash.

The tax is now paid in cash. The local government boards are strictly forbidden to accept payment of the tax in rubber, even when it is offered by the native. As for the districts where money has not yet been introduced, the collection of the tax is

which is only imposed on full grown and able male natives. A light supplementary tax is laid on more than ordinary wealth, as indicated by the possession of several wives which, in Africa, is the surest sign of prosperity.

The colonial charter authorizes appropriate reduction of and exemption from taxes, and both are practised to a large extent.

What, now, are the taxes and fiscal obligations to which a European or other foreign trader in rubber is subjected?

Under the old *régime* he had to pay a license of \$1,000, and he was also under the costly obligation to replant rubber bearing species. Today he only has to take out a collecting permit, which costs him \$50, and is available for a year. He pays an export duty of 6 cents per lb., and a replantation duty and tax which are respectively 7½ cents, and 4 cents per lb. of rubber gathered from trees or vines, and 5 cents and 2 cents per lb. of "grass rubber." These are the only charges pertaining to this special trade.

As to the general taxes, they are certainly not excessive. The traveling merchant pays a license of \$100. The merchant, or the farmer who has a settled establishment in the colony, pays on his buildings a tax of 15 cents per square yard, which is reduced to 5 cents for such buildings as are used to house the native staff. He pays \$2 per servant, \$1 per workman, and from 40 cents to \$1 per ton for the ships he uses, according to the class they belong to.

Let us mention here that the farmer who wishes to establish rubber plantations in the Congo receives certain favors which do not affect one who only collects wild rubber. These are: reduction of the tax on each native laborer employed to 20 cents, instead of \$1; remission of tax of 7½ cents per lb. of harvested rubber, and remission of all tax on the buildings for farming or cattle growing.

The colony also busies herself with the establishment of large plantations, a special fund maintained by the replantation tax previously mentioned being devoted to this purpose.

So much for the system of government, the equity and modera-

tion of which are acknowledged by its subjects, under which reforms are willingly approved by the government, voted with enthusiasm by the assemblies, and applied in good faith.

The instructions given by the government to its agents are expressed and reiterated in peremptory terms. Their execution is closely watched. Reprimands have been administered to certain agents who had accepted payment of taxes in rubber, the natives having offered them in that form.



UNPACKING RUBBER PREPARATORY TO TRADING.

Numerous Europeans of various nationalities have already taken advantage of the new *régime* to settle in various points of the country. Nearly 200 sales or leases of crown lands have already been granted. Moreover, five important concessions were granted, as per agreement of April 14, 1911, to Messrs. Lever Brothers, Ltd., of Port Sunlight, for the working principally of oil factories. Messrs. Lever Brothers are well known for their extensive business and the philanthropic and social manner in which they carry on their work wherever they settle themselves. They are obliged by the government to establish in each concession a school and a lazaret.

On the other hand, the religious missions are spreading and rapidly accomplishing their occupation of the land. They have every support from the Belgian Government, which has been Catholic for the last 27 years.

The Protestant missions possess 46 establishments in the Congo, and since the reforms, eight sales or leases of crown

energy to the study and the treatment of trypanosis in said laboratory. Amongst the 29 lazarets established by the government, some are managed by missionaries and are entrusted to graduated religious nurses especially trained for that purpose.

Missionaries, planters and merchants freely distributed all over the territory, mold public opinion, and under this efficacious



IVORY AND RUBBER CARAVAN.

control is the methodical application of the reforms brought about.

This is not the work of a day, and no government with common sense would think of upsetting the whole interior economy of an immense territory by transforming its whole administration with a touch of the magic wand. Precautions had to be taken; gradual transitions had to be arranged, and experiments had to be made. A whole staff permeated with other ideas, and accustomed to other ways, had to be rallied, instructed and directed, and that at enormous distances. It was therefore decided to proceed gradually in the work of reorganization. The ordinance of March 22, 1910, divided the colony in three zones, whose transition to the new methods had to be brought about from year to year. The first zone was opened to free trade on July 1, 1910. This zone alone comprises three-fifths of the territory. Its area is three times that of the United Kingdom. It spreads over the whole southern half of the colony, and almost com-



RUBBER CARAVAN.



NATIVE DUG-OUT CONTAINING A RUBBER CARAVAN.

lands have been negotiated with them. Catholic or Protestant, they all work with zeal to educate the native children; they are mighty assistants to the State in their unsparing efforts to fight the plague of sleeping sickness.

All are requested to send delegates to the Leopoldville's bacteriological laboratory. Traveling and all other expenses are paid by the government to missionaries who devote their

passes the whole. The reforms have thus been applied to all the districts in contact with neighboring colonies, as soon as they were enacted.

The second zone was opened July 1, 1911. It comprises the whole centre of the colony—its richest districts in rubber—the domain of the old Crown Estate.

Finally, the third zone, which comprises the north of the terri-

tory with a part of the centre will see the reforms completely applied July 1, 1912.

The government, moreover, is anxious to have the task accomplished and whenever it can be done without grave inconvenience, she anticipates the set dates. Sales of land are now being conducted in the three zones, and have been for several months

bend. The first one is shrinking and rapidly diminishing. It indicates the territories set aside for the Great Lakes Railway Company, ten million acres for every five million dollars spent.

Two lines already laid have cost 50 million francs (10 million dollars), and caused a grant of 20 million acres of forests worked by the government on half shares with the company.



RAILROAD TRAIN AT LEOPOLDVILLE.

past on the basis established by the new government. Companies and private individuals are settling. The tax in foodstuffs is also, from now on, abolished in the three zones.

But the zones do not comprise the entire area. Large spaces remain, the forest reservations where all harvesting is prohibited for the time being for the sake of preserving the native plants.

These were the grants of territory to land-owning companies under the old government. The Belgian State could not abolish these concessions, but has not given up the idea of bringing about their relinquishment. Negotiations are being carried on with the title holders of monopolies or property, the government being anxious to secure uniformity throughout the whole system. The results—obtained sometimes at great sacrifice—are considerable.

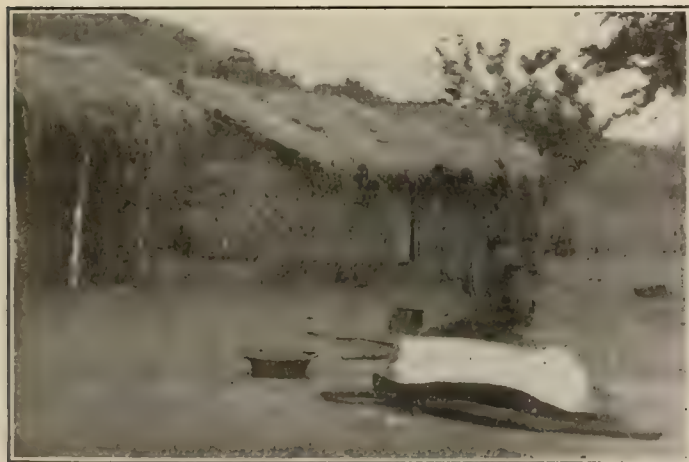
One of those thus re-purchased involves the immense territories of the Southwest, where the Kassai Company had an actual monopoly; in whose profits the State had a half share. This



A LARGE RIVER STEAMER ON MARINE RAILWAY AT LEOPOLDVILLE.

The undertaking of a new line towards Lake Tanganika will cost another five million dollars, but the concession of land will not be extensive this time. The company agrees to limit itself to the forests already granted, only increasing the proportion of its shares in the profits of their working. The immense areas left for future concessions are thus immediately thrown open again to the initiative of free trade. The other two important spaces are also disappearing.

These represent the concessions granted to two old companies of land-owners: The Abir (Anglo-Belgian Indian Rubber Co.) and the Société Anversoise du Commerce au Congo (Antwerp-Congo Trading Co.). By agreement, dated May 23, 1911, these two companies abandon their monopoly, relinquish their right of ownership, and keep only their stations and plots of land for plantations, agreeing to bring them into working order. Belgium gives up her share in the profits. Eighteen months after the



NATIVE HOUSES.



HOTEL ON THE MATADI-LEOPOLDVILLE RAILROAD.

monopoly is abolished. Belgium has given up her share in partial compensation and her shares in the profits have been done away with. The old territories which the Kassai Company used to work, but where competitors are settling now, are merged in the first zone.

But three great vacant spaces still remain: to the east of Lualaba, to the north and to the south of the great Congo river

approval of the agreement by the Assemblies, the territories, worked by the companies, will be opened to free harvesting.

The extension of the reforms to the whole territory is thus a certainty. It now nears completion, and will be accomplished in a year's time. We may from now on declare nine-tenths of the enormous territories of Central Africa open to free harvesting, open to free trade, and open to free labor.

The India-Rubber Trade in Great Britain.

(By Our Regular Correspondent.)

THE prevailing topic in England has been the extraordinary fine and sultry summer which in July, the third hot month in succession, beat many existing records, nothing approaching the amount of sunshine having been experienced for 24 years. I have no exact figures as to the effect upon the waterproof garment trade, but it must have been very pronounced, and the set off in the increased demand for garden hose has been seriously affected by householders having notice in many districts to discontinue the use of hose owing to the threatened failure of the water supply. Although trade generally has been good during the summer there has been no exceptional activity in the rubber trade, some firms indeed reporting business as decidedly quiet. Hardly anything has been done in new rubber planting promotions, no doubt the low figure at which the quotations for many of the boom time companies stand making it difficult to interest underwriters. The financial papers have been full of reports of inharmonious meetings, at which disappointed shareholders have taken directors to task, and this has occurred not only in wild-cat companies, but also in the case of concerns floated under the best auspices and supported by the reports of scientific authorities. I don't propose to mention by name any particular company but I think that what has occurred with various companies in different parts of the tropics bears ample testimony to the value of the disinterested criticism which was to be found in the editorial columns of THE INDIA RUBBER WORLD during the boom period of last year. Although there has been a good deal of talk in the case of various companies of taking proceedings against promoters or directors, I don't know that any threat has matured except in one case where an investor got judgment for his investment of about £500 against a company who were prominently concerned in the flotation.

THE Reinforced Rubber Company, Limited, which was briefly noticed in these columns at the time of its flotation last year, is now steadily at work. The factory is situated near Hull, the London offices and salesrooms being at 42 Norfolk street, W. C. The main feature of the patent is the use of strong cotton thread introduced lengthwise into the body of the rubber, whereby, it is claimed, that the latter is greatly strengthened, a claim which is fully borne out by dynamometer tests. The reinforced rubber is by no means similar in its wearing capacity to ordinary canvas insertion. In the prospectus the utility of the invention was referred to chiefly in connection with boot soles, satisfactory reports having been made by the London Shoe Company, Limited, but more recently satisfactory experiments have been made with a variety of rubber goods, including solid and pneumatic tires, inner tubes for motor and cycle tires, rubber flooring, railway buffers, etc., etc. Mr. Major, who is well known as a tar distiller at Hull and Wolverhampton, is the moving spirit, though there is also a works manager of experience in the rubber trade and also a rubber chemist whose whole time is given to the business.

SINCE colorless rubber goods, made from enzyme free rubber by Bambees process, were put on the market three years ago by the Leyland and Birmingham rubber companies I don't seem to have heard much about them. This, of course, is nothing to their discredit, and the fact that feeding bottle outfits are commonly made of this class of rubber today shows that its advantages are recognized in some directions at all events. The other day, when being shown through the

laboratory of a large metallurgical works, I noticed that a considerable amount of rubber tubing of one-half inch diameter of this quality was in use. Enquiries that I made from the chemists elicited the opinion that it was not so satisfactory as the ordinary black tubing made from cut-sheet and this mainly from its greater tendency to oxidation and less resistance to chlorime and other destructive gases met with in the laboratory air.

THE Eighth Triennial Congress of Applied Chemistry meets in Washington and New York in September, 1912, the cordial invitation given by Mr. Whitelaw Reid on behalf of his government on the occasion of the last meeting in London in 1909 having been unanimously accepted. At the London meeting the few papers dealing with rubber were taken in a section devoted mainly to a different subject and the lack of suitable arrangements made the Congress, as far as rubber was concerned, quite a fiasco. The complaints made with reference to this have borne good fruit, and at the New York Congress there will be a special section of organic chemistry devoted to India Rubber and Other Plastics. L. H. Bockeland is president; C. C. Goodrich, vice-president, and Jaspar E. Crane, secretary, Harold van der Linde and David Spence making up the list of officials. The existence of this sub-section means that papers on rubber will be read before men who know something about the subject, and if the sub-section can get papers and attendance, such as was the case at the recent rubber exhibition in London, it will more than justify its formation. I may add that the Society of Chemical Industry, at its annual meeting this summer in Sheffield, was invited by a prominent member of the New York section to hold its next annual meeting at New York, and it was agreed to do so at about the same time as the above Congress. The Society of Chemical Industry has a good many rubber manufacturers and chemists among its members and some, at any rate, of these are sure to attend the meeting and the Congress.

THE practical test carried out by a committee of experts at the late rubber exhibition for the production of synthetic rubber by the Heinemann process has certainly attracted considerable attention and has led to some searchings of heart among those controlling raw rubber interests. The report of the committee of experts is not yet available and all that is known with certainty is that rubber of a sort was made in a fairly large quantity from isoprene. That this was possible has long been known, but hitherto it has been thought that the cost of production would be prohibitive. Mr. Heinemann's backers, however, are credited with saying that they are certain of being able to produce the synthetic rubber at about 6d. per pound. The raw material to be used is crude Baltic turpentine, and it is through the sale of the by-products of the process at a good profit that the production of the rubber is brought down to a reasonable figure. Of course, the price of turpentine, owing to the destruction of the trees in America, has been on the up grade for years and undoubtedly there will be a good market for the Heinemann by-products if, as I presume, they can replace ordinary turpentine in the varnish trade. I don't suppose that the Heinemann people have any monopoly of crude Baltic turpentine and presumably this raw material will be drawn upon by the other patentees for the production of synthetic rubber from isoprene. Last year the synthesis of isoprene was effected by Professors Perkin and Weizmann at Manchester University and patented by them. Recently, however, they have joined forces with Messrs. Mathews & Strange, of London, as a limited company which

REINFORCED RUBBER.

SYNTHETIC RUBBER.

TRANSPARENT RUBBER.

(according to the promoters) may or may not prove highly remunerative to the investor. Then there is the patented process of the Bayer Company, of Elberfeld, Germany, in which isoprene is also used. This company was reported a year ago to be about to erect a factory at Kiel, but I do not know whether the project has matured. With regard to the Heinemann process it is stated that a factory to treat 80,000 tons per annum of Baltic turpentine for the production of 7,500 tons of rubber is shortly to be erected in England, as it will be seen that events are moving rapidly forward. I see that Mr. Bethune, when addressing the annual meeting of the Rubber Growers' Association, said it would be advisable to test synthetic rubber for several years before adopting it for manufacture "for the tendency with many synthetic articles was for them to dissolve after a time into the constituent atoms." With the desirability for prolonged tests of the synthetic I quite agree, but I don't quite understand why synthetic organic compounds should be liable to dissolve into their constituent atoms. Synthetic bodies may, of course, undergo decomposition through oxidation or other causes, but I doubt if the elementary atoms of carbon and hydrogen have ever been produced from the various synthetic organic compounds now firmly established on the market—that is outside the chemical laboratory.

MR. REIMERS, THEN AND NOW.

THE many friends of Mr. Herman Reimers, that is, on this side of the Atlantic, will remember him as a stout, athletic, exceedingly jolly individual with keen blue eyes, tightly curling blonde hair, and a general appearance of tremendous vitality. He was a large man and so much resembled Sandow that he was often taken for him. But he has changed. It is only necessary to glance at the accompanying illustration drawn especially for "The India Rubber Journal," London, to appreciate what Europe has done to and for our friend. Few who knew him would recognize in the dapper, clerly (pronounced clarkley) figure, the once robust Reimers. London fog? Mincing Lane? Home-sickness? Is it any or all of these that have thus wrought upon one whose physique was the pride of the American rubber trade?

WASTE LEATHER; WHY NOT RUBBER WASTE?

English advices speak of a road made of leather waste treated with tar as being resilient and silent, while showing no signs of wear after a year's service. This mode of dealing with a waste product (for which no real use has existed) is considered a distinct advantage of the leather industry. No claims are, however, made for leather waste, which are not equally applicable to rubber waste. If rubber ever reaches 50 cents a pound to remain there, roads of rubber waste would be a probability.

TEN YEARS IN THE AUTOMOBILE TRADE

A preliminary statement, showing the rapid growth of the automobile industry during the past decade, has recently been issued by the Director of the Census. It shows a most remarkable development of the business, the number of establishments having increased from 57 in 1899, producing 3,723 machines, valued at \$4,548,100, to 316 in 1909, with an output of 127,289 machines, and a total value of all products of \$194,722,600, an increase of 4,001 per cent. Of this, \$165,115,100 was the value of the machines manufactured, and \$29,607,500, of automobile parts and repairs. The increase in the number of establishments represents 454 per cent.; in the number of automobiles turned out it amounted to 3,319 per cent.

The banner automobile manufacturing state is Michigan, where about 45 per cent. of the total output originated. It is a fact worth noting that the states in which carriage building flourished as an industry, lead in the building of automobiles. The passenger car exceeds its commercial rival numerically, 122,505 of all the cars listed being classified as "pleasure and family vehicles."

SPECIAL GOVERNMENT CHEMICAL INVESTIGATION.

With a view to remedying the disproportion between American imports in 1910 of chemicals and drugs, of about \$90,000,000 a year and exports of about \$20,000,000, the Bureau of Manufactures of the Department of Commerce and Labor is about to undertake a special investigation of the question. This step has been decided upon in view of the growing American desire to secure information concerning the remarkable expansion of the European chemical industry. Imports have, it is added, increased from \$67,000,000 in 1908 to \$90,000,000 in 1910, while exports have remained almost stationary in the neighborhood of \$20,000,000.

MICA INSTEAD OF TALC.

Inner tubes in automobile tires would stick and heat much worse than they do were it not for the thorough dusting with soapstone, talc, or sometimes graphite that they receive. The former substances, however, are not ideal, as they absorb water, and cake, while the last named is very apt to soil the hands and the clothing. An ideal substance is powdered mica. It is a perfect insulator and really prevents heating to a degree. It does not absorb moisture, and always stays in powder form. [United States Mica Company, Chicago, Illinois.]

MEXICO'S RUBBER SHIPMENTS during five months ended November, 1910, aggregated in value \$4,970,000 gold, against \$2,148,000 during the same period in 1909, and \$1,480,000 for the same period in 1908. These figures, do not include guayule rubber, which totalled \$2,500,000 in the five months of last year, compared with \$1,700,000 and \$564,000, respectively, for the same periods in 1909 and 1908.



MR. HERMAN REIMERS.

Some Rubber Interests in Europe.

GERMANY.

ASBEST UND GUMMIWERKE ALFRED CALMON, A. G., Hamburg. The extraordinary general meeting held July 31 was called upon to decide as to a reduction of the fundamental capital from 6,000,000 marks (\$1,428,000) to 4,000,000 (\$952,000) by withdrawing one share out of every three. At the same time, action was to be taken in regard to the issue of 2,000,000 marks (\$476,000) preferred stock. The number of shares represented at the meeting was 2,783,000. Chairman Oscar Ruperti recommended the adoption of the above propositions, which, he stated, had received careful consideration and which alone promised the rehabilitation of the business. Consul Heymann, in an address opposed the business management, the administration and the proposed recuperative measures, denounced the meeting, at which no information in response to inquiries could be obtained, as a "farce," and demanded the immediate release of General Director Calmon, with reservation of the right to institute claims for damages against him. He closed with an appeal to the stockholders to reject the propositions and vote for liquidation. After an address by Director Calmon, who outlined the promising condition of the business and speeches pro and con by other stockholders, a ballot was taken which resulted in the adoption of the propositions by a vote of 2,300, against 20 dissenting.

Deutsche Gummi und Wingerwerke, G. m. b. H. Berlin, will henceforth be known as Deutsche Gummi und Winger Fabrik, and the place of business has been removed to Charlottenburg.

Aretz & Cie, Karlsruhe, Baden. The partnership is dissolved. William Schma has left the firm and Arthur Fackler is now sole proprietor.

The decease is announced of Georg Hoffman, of the rubber goods house, conducted under that title. His widow, Frederike Charlotte Hoffman will continue the business, with Miss Emma Auguste Hoffman as attorney.

The Westdeutsche Gummi Compagnie, m. b. H. Duesseldorf, has obtained commercial registry. The company will deal at wholesale in products of the rubber industry, especially rubber heels. The capital is 30,000 marks (\$7,140); the managers are Willy Hellinghausen and Heinrich Chorman, merchants, Duesseldorf.

The Mitteldeutsche Gummiwaren Fabrik, Louis Peter, Akt. Ges., at a general meeting recently held, elected Privy Commercial Councillor Lukas, Berlin, and Director Burg of the Maschinenfabrik, Augsburg-Nuremberg, directors, to fill vacancies in the board. The condition of the business was reported as not unfavorable, the volume exceeding that of last year by 19 per cent. The directors are of the opinion that no deficit is to be expected for the current business year.

The decease is reported of Wilhelm von Recklinghausen, director and president of the Kölnischen Gummifäden fabrik, formerly Ferd. Kohlstadt & Co., Cologne-Deutz, in the fortieth year of his age.

At a recent meeting of shareholders of the Gummiwerke Elbe, A. G., Berlin, it was resolved to increase the capital stock by the issue of 750,000 marks (\$178,000) in 6 per cent. preference shares.

Gummiwaren Manufactur Kron und Baer, Bremen, has been acquired by Albert Doeding, who will continue the business under the former title.

AUSTRIA-HUNGARY.

Ungarische Gummiwaren-fabriks A. G., Buda-Pesth, Hungary. In consequence of the decease of State-councillor Gustav v. Emmich, Hugo Marcus has been elected president. Former general-director Bela Rechnitz has been elected to succeed him as vice-president.

FRANCE.

Société Commerciale de Caoutchouc. Anonymous French company with headquarters at Paris. Period of charter, 50 years, capital 2,000,000 francs (\$380,000) in 20,000 shares, each of 100 francs. The company will manufacture and deal in rubber and rubber products.

DENMARK.

The Continental Dunlop Pneumatic Tire Company's Danske Filial ved. Wm. Gunn. The agency of C. R. Fischer has expired; A. H. Hall has been appointed agent.

The firm's general agenture ved Bergstroem and Gothersgades Gummivarelager ved Bergstroem, since the decease of C. F. G. Bergstroem, have been acquired by H. Joergensen, who will continue them under the name of ved Henrik Joergensen.

The Aalborg syndicate that planned the establishment of a rubber footwear factory in Jutland, under the title of "Den Nordjyske Galoche fabriks," is reported to have entered into a joint arrangement with the North British Rubber Co., Ltd., in Edinburg, Scotland, for co-operative working and the prospects are considered good for the establishment at Aalborg of a factory employing 150 work-people and with a preliminary annual capacity of about half a million pairs of rubber shoes.

GREAT BRITAIN.

It has been noticeable of late that British makers of golf goods of various kinds have been increasing the sales of their products in the United States, as a result of bringing their special lines more prominently to the notice of the trade and of the golfing public. In spite of the obstacles which the tariffs present, the results of efforts made to extend business are reported to have been fairly encouraging. In the export markets generally British golf balls are making great strides. The increased output of so many of the larger firms has had its usual effect in enabling the manufacturers to produce on economical lines, while keeping the quality of their output up to a uniform standard of excellence. Such firms, for example, as Martins-Birmingham, Ltd., have the facilities necessary for producing high-grade balls on a very extensive scale. The chief productions of this firm are the "Zodiac" and "Hurricane," in the more expensive qualities, and the cheaper lines the "Pluto," "Nipper" and others.—*Sporting Goods Dealer.*

The St. Mungo Manufacturing Company (Glasgow, Scotland), golf ball makers, have acquired the business of the American Golf Ball Company, which was the successor of the Kempshall Manufacturing Company, with a plant at Arlington, New Jersey. The St. Mungo Manufacturing Company, in addition to their water core ball, make regulation balls known as the "colonel," the "little colonel," "white colonel," and the "heavy colonel." The latter is a new type heavy ball for hard hitters.

CALLENDER'S CABLE COMPANY GETTING ITS SHARE.

A gratifying feature of the statement of the Managing Director, Mr. T. O. Callender, at the annual meeting of Callender's Cable & Construction Company, was his allusion to the distinct improvement in business since Easter. This was, he added, partially due to the improved position of the electrical supply companies. In almost every part of the world they were getting a fair share of the business.

He likewise referred to the financial aid by which British bankers were helping the Germans to carry out work in South Africa.

THE accepted authority on South American rubber—"The Rubber County of the Amazon," by Henry C. Pearson.

Japanese Rubber Statistics.

FOLLOWING up the general statistics of Japanese imports for the calendar years 1908, 1909 and 1910, which appeared in the June issue (page 306), the subjoined table, based on statistics received from a correspondent, shows the details and sources of imports at Yokohama during the month of May, 1911. The importations at that point being chiefly for the consumption of Tokio and other districts of central Japan, this return, while dealing with only one month, is typical in character; particularly as it represents almost the last receipts under the old Japanese tariff, which expired on July 17. Extracts from both the old and new tariffs appeared in the August issue of THE INDIA RUBBER WORLD (page 454), and the incidence of the new tariff will be reported in due time.

Taking the aggregate imports thus shown, in comparison with those from the United States, it will be found that apart from insulating wire, this country shared to the extent of about 35 per cent. in the Yokohama imports of manufactures of rubber for May, 1911.

YOKOHAMA IMPORTS OF INDIA RUBBER AND MANUFACTURES, MONTH OF MAY, 1911. (CONVERTED INTO AMERICAN EQUIVALENTS.)

	From.	Quantity, Pounds.	Value.	Total Pounds.	Value.	Duty, (Old Tariff)
CRUDE RUBBER	British India	7,240	\$4,125			
	Malay States	18,346	9,716			
	Dutch India	6,893	4,513			
	Great Britain	6,590	8,868			
	United States	15,424	18,292	54,493	\$45,514	Free
RECLAIMED AND WASTE RUBBER	Malay States	53	4			
	French India	2,219	235			
	Other countries	4,758	428	7,030	667	Free
PLATE RUBBER						
Soft and Thick	Great Britain	593	532	593	532	10%
Hard	Germany	3,679	2,293			
	United States	3,220	2,598	6,899	4,891	10%
TUBE AND ROD RUBBER (Hard)					1,389	10%
ALL OTHER RUBBERS	Great Britain	7,576	2,672			
	France	317	175			
	Germany	12,997	2,397			
	United States	55,055	9,917	75,945	15,161	10%
INDIA RUBBER AND GUTTA PERCHA MANU- FACTURES—UNSPECIFIED	Great Britain		98			
	France		589			
	Germany		1,718			
	Austria		35			
	United States		2,350		5,390	10%
ENGINE PACKINGS	Great Britain	7,145	1,238			
	Germany	1,583	146			
	United States	3,977	2,160	12,705	3,544	10%
HOSE AND MACHINE BELTINGS	Great Britain	6,399	1,658			
	United States	4,223	1,651	10,622	3,309	12%
BICYCLE TIRES	Great Britain	15,506	18,251			
	France	253	215			
	United States	1,033	2,383	16,792	20,849	30%
CARRIAGE, MOTOR CAR and all other parts	Great Britain		1,227			
	France		58			
	Belgium		26			
	United States		1,105		2,416	50%
RUBBER BOOTS						
RUBBER OVERSHOES	United States (pairs) 1,422		750	(pairs) 1,422	750	40%
WATERPROOF CLOTH	Great Britain (sq. yds.) 374		223	(sq. yds.) 374	223	30%
ELASTIC BRAID AND CORD	Great Britain		546			
	Germany		305		851	30%
AIR PILLOWS	Germany (number) 588		366	(number) 588	366	40%
RUBBER CLOTH FOR SHOES—						
Silk						
Other	Great Britain (sq. yds.) 1,556		3,132			
	Germany	485	1,241			
	Austria	347	805	(sq. yds.) 2,388	5,178	20%
INSULATED ELECTRIC WIRE—						
Submarine and Underground Cables						
All other	Great Britain	33,248	10,519			
	France	50,389	3,669			
	Germany	1,601,082	107,867			
	Italy	2,798	906			
	United States	127,499	25,661	1,815,016	148,622	5%

TRADE NOTES FROM JAPAN.

(Special Correspondence.)

A NEW factory is under construction for the Nippon Rubber Company, Tokyo, to replace the structure destroyed in the big fire of April last.

The factory of the Kyushu Insulated Wire Works, recently established with a capital equalling \$500,000, is to be situated at Moji.

With a view to enlarging their factory for the manufacture of paper insulated cable, The Yokohama Insulated Wire Works recently acquired a piece of land about one acre in extent, on which to install an extension. The place of their former chief expert, Mr. Hata, who recently left the works, has been filled by Mr. D. Coyle, who lately came out from England at the request of this company. Developments of its operations are looked for in the future.

Some new machinery from Europe is being installed by the Fujikura Cable Works, who contemplate extending their production. A branch is now engaged in manufacturing waterproof cloth, which is meeting with some favor in the market.

The Teikoku Belting Company, which has lately been floated in Tokyo, with a capital equalling \$250,000, has taken over the former Ota-shiki Belting Company.

JAPANESE VIEWS ON RUBBER CULTURE.

THE "Gomu Shimpō," addressing Japanese rubber manufacturers, says:

"The survey of the Southern Ocean and South America is most important for rubber corporations contemplating the establishment of rubber plantations. It would certainly be very advantageous to study the nature of the soil, and the climatic conditions of the Malay peninsula. But as in that country a great deal of planting is being done, and there are numerous rubber plantations, more capital will probably be required for the establishment of new plantations than in Borneo. In an uncivilized country there is certainly more exposure to danger, but on the other hand, there are also great advantages. In addition to many other valuable products, there are wild rubber plants. The leasing of land for the establishment of rubber plantations is easy and the rental is low. (In some sections admittedly the rental of land is difficult.) But the means of communication between Borneo and Japan are decidedly less convenient than with the Malayan Islands. It is, therefore, of primary importance that improved means of communication be provided, if large plantations are to be established there, so that direct importation into Japan will become possible. These undertakings have been made an object by several capitalists who propose to establish in common large plantations, as an associated planting company, exactly in the manner proposed by Mr. Schichijuro Yojo. It is to be hoped that many people will seriously consider this enterprise.

"On the Pacific insular groups there dwell about one milliard, 50 to 60 million natives and 50,000 Chinese, in addition, there are at present 5,000 Japanese, the latter, mostly immigrants from Kyushu. The trade is mainly in the hands of German or Chinese merchants. There are among them only isolated Japanese, such as Shibuya & Co., who have made more than 10,000 yen (\$5,000). The Japanese are mostly engaged in trading in drugs and raw materials. As the Chinese are possessed of great endurance and patience, and on the other hand, German goods are very cheap, the Japanese find no opportunity to enter into competition. After the war between Japan and Russia, the Japanese rose in estimation, and the land princes showed them some favor. But this was but of short duration. When Japanese laborers have saved 50 to 100 yen (\$25 to \$50) they

make their way to Singapore. Life there is expensive, especially for people not fully acquainted with the language of the country, and the money is speedily exhausted. The Chinese, like the natives, work for a daily wage of 50 to 60 sen (25 to 30 cents). For this low wage, however, the Japanese will not work. Consequently, many Japanese wander off to the pearl fisheries in the East Indies. They work there half the year at sea and half the year on land. But the cost of living is so high that hardly one in a hundred can save a larger sum. After the sixth month, the sea is very stormy and the work dangerous, so that many of the people come to grief. The most promising prospect is, with a little capital to start a rubber plantation. The large offers of rubber in the spring of last year was only an exception. When rubber plantations have previously been laid out, the capital invested had to remain six to seven years without profit. And in proportion as the rubber trees become more productive, the price of rubber, it is easy to see, will decline. For this reason the Mitsui Co. gave up, last year, its rubber plantations in the Pacific.

Hoshikawa & Co,
Kamigamo,
Kyoto,
Japan.

July 1911.

Gentlemen--

We are hoping to
plant young-sprout of Para-Rbr
and Manihot; beg to request
some suitable rubber-
sprout--seed--shop's-
names with full addresses
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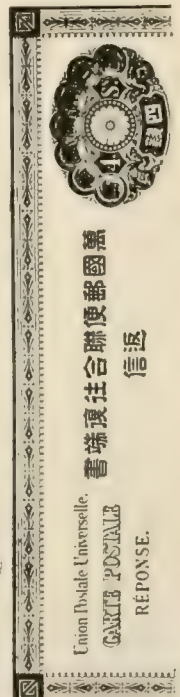
A FUTURE JAPANESE PLANTER.

CAREER OF A JAPANESE RUBBER JOURNALIST.

In view of the constantly growing relations of this country with Japan, the progress of Japanese trade journalism is being watched with interest.

Among its prominent representatives is M. S. Yamada, of the Japanese rubber journal, the "Gomu Shimpō." He was born in 1882, and in 1904, after having passed through the middle schools of Shinstu and Ikubunkan, entered Waseda University, where he took up the English literature course and from which institution he graduated in 1908.

After having been editor of several business magazines, he became editor in January, 1910, of the "Gomu Shimpō," of which journal he became editor-in-chief in January, 1911. In view of his command of both English and Japanese, Mr. Yamada will be in a position to promote the development of American commerce with Japan, notably in connection with the rubber trade, to which his special attention is being devoted.



The Editor's Book Table.

RUBBER COMPANIES IN THE NETHERLAND EAST INDIES. BY COLLEEN A. G. N. SWART, I.L.D., President of the Netherland Companies, and issued by the Commission for the International Rubber Exhibition, London, 1911. [Cloth, 8vo, 307 pages, with colored maps. Amsterdam: J. H. De Bussy.]

A MANUAL of particulars, brought up to date, of the various companies working rubber estates in the Netherland East Indian Colonies, and including not only companies that plans rubber exclusively, but those who make it their main object.

Preceded by exhaustive papers on the "Suitability of the Netherland East Indies Rubber Cultivation," by Prof. Dr. P. Van Romburgh, of Utrecht University, and on "The Climate of the Islands in the Netherlands Indian Archipelago," by Dr. J. P. Van der Stok, director of the Royal Netherland Meteorological Institute, this work presents a complete list, in alphabetical sequence, of all the companies in the Netherland East Indies, interested, either exclusively or largely in the cultivation of rubber. The points of information covered in the case of each company are capital and plan of issue, purchase price of property, directors, secretary and office address; name and area of estates, their location, altitude, tenure, proportion under cultivation and to rubber; nature of catch crops, production and general information as to financial management, etc. The data has been obtained at first hands, and those for whom particulars did not arrive in time, are collected in an appendix.

An interesting addendum to the book consists of a classification of the total of the capital of all the rubber companies in the Netherlands East Indies, according to the country from which the greater portion of the capital for each company has been furnished. Under the caption, "American capital," appears but one entry, the Karimon Rubber Maatschappij, for which an investment of 1,000,000 fl. (\$402,000) is recorded.

GUAYULE—A RUBBER-PLANT OF THE CHIHUAHUA DESERT. By Francis Ernest Lloyd, professor of plant physiology, Alabama Polytechnic Institute. Published by the Carnegie Institution of Washington, Washington, D. C.

IN an exceedingly scholarly and completé monograph of more than 200 pages, illustrated by nearly 50 full-page plates, Professor Lloyd tells the whole story of guayule from its beginnings up to the present time. The preface speaks of Professor Lloyd's employment by the Continental-Mexican Rubber Co. and the Inter-Continental Rubber Co. to investigate the cultivation of guayule. This engagement lasted about a year when it was terminated. Later, while representing the United States Rubber Co. in guayule investigation, he had this additional opportunity to gather much information concerning this most interesting of the rubber-bearing shrubs.

The book is divided into nine chapters which, beginning with an historical account, treat the environment and all that that means in the way of geographical distribution, climate, etc., a complete botanical description of the plant, root systems, seeds, leaves, etc., reproduction, anatomy and histology, the resin canals, the origin and occurrence of the rubber, and of guayule cultivation.

The book is by far the most complete and important contribution to the literature of guayule that has yet appeared.

RUBBER TREE INSURANCE. BY FRED W. KNOCKER, F.Z.S., F.R.A.I. *The Financial News*, London. 8vo, 16 pp., paper.

THE author, who is not unknown in the field of rubber literature, has embodied in his pamphlet, several articles, on the insurance of plantation rubber trees against destruction by fire or tempest or injury by wild animals. This is a business lately taken up by Lloyds, and the author's purpose is to show that if the concern in question would send representatives out to the rubber growing sections and look personally into the business, there is every prospect of its increase.

AN AMERICAN CONSUL IN AMAZONIA. BY MAJOR J. ORTON KERBY. New York, William E. Rudge, 1911. [Cloth, 8vo, pp. 370. Price, \$2.50.]

Major Kerby is an old friend of the *INDIA RUBBER WORLD*, and for years sent valuable contributions from the land of Pará rubber. His book is written in an easy conversational manner, and deals with its various subjects with the utmost frankness. The author in his foreword explains that the beginning of the book, cabled to a press syndicate, was "prohibited by a cable dispatch from the then Secretary of State." On his return friends advised against its publication because of its criticism of the consular service and "certain humorous personalities." Now, however, with a consular service in the Brazils that we are proud of, with the humor expunged (?), with the "late Assistant Secretary of State" out of office, and under the friendly patronage of Andrew Carnegie, the book appears.

Printed in legible type, on good paper, with a profusion of illustrations that are appropriate and informing, as well as artistic, the work leaves nothing to be desired typographically, the binding, dark green cloth, embossed with tropical scenery in silver and black, completing the attractiveness of its appearance.

PARA RUBBER CULTURE IN SURINAM. BY A. W. DROST, assistant agronomist to the Department of Agriculture, Surinam. Amsterdam: J. H. De Bussy, 1911.

WHAT Mr. Drost has written and had translated into English is very interesting. The volume is not large, but it is very informing and has some exceedingly striking full-page illustrations of *Hevea* rubber in various stages of plantation growth. There is also given a history of the planting of *Hevea Brasiliensis* in the colony and a list of the important plantations, the number of trees and their ages. There is a very clear description given of the climate, soil, of planting methods, tables of comparative growth under various conditions, and of tapping results from plantations which already have matured trees. Mr. Drost will, undoubtedly, some time in the future, expand the work into one that will cover the whole subject upon which he is so well posted.

OTHER BOOKS RECEIVED.

SUR LA DÉTERMINATION DU CAOUTCHOUC COMME TETRABROMURE (The Determination of Rubber as Tetra-bromide), by D. Spence and J. C. Galletly. In this brief treatise the authors call attention to the loss of bromine, which takes place in the decomposition of bromic derivatives of rubber by nitric acid, as recommended by Budde. They have been seeking to determine whether such decomposition can be effected without this loss, and claim that simple heating with a mixture of carbonate of soda and nitrate of potash gives satisfactory results.

Details of the tests made are quoted in six tables dealing with nineteen separate experiments. In some cases it was sought to determine whether carbonate of soda alone could effect the decomposition in the conditions desired, the result justifying that supposition.

In conclusion, it is stated that the best method of supplying this process of combustion to the determination of rubber will be considered later on.

THE STORY OF RUBBER. The author, Lindley Vinton, of Georgetown, British Guiana, has undertaken, in a thirty-page, 16mo, paper-covered pamphlet, to present a brief sketch of the history of the development of rubber cultivation in the East, and an examination of the present and future demand and source of supply for the benefit of those of the public who are interested in its production. The work is published by the Holliswood Press, Forest Hills, Long Island.

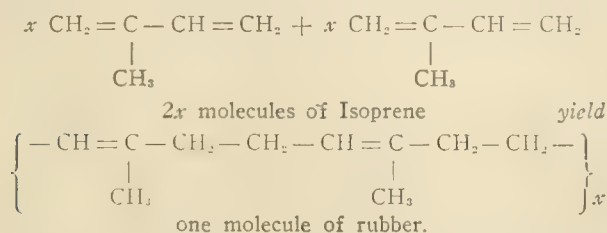
Actual Synthetic Rubber.

FOR the first time in the history of the rubber trade what appears to be real rubber produced by synthesis has been upon exhibition in England. Nor was it shown by charlatans or self-deceived inventors. The producers are reputable chemists and deceived inventors. The producers are reputable chemists and physicists, and there is no indication of stock promotion, sale of rights or attempt at trade revolution.

Dr. Silberrad, Ph.D., M. R. S. A., F. C. S., etc., thus takes the world into his confidence:—

The synthesis of substances originally obtained from natural sources is by no means new. Among a multitude of others now of considerable mercantile importance the following may be mentioned as examples: Indigo, vanilline, and oil of wintergreen. Thus synthetic rubber, although prepared "chemically," is not a substance adulterated with chemicals and not therefore inferior from that point of view. It has been suggested that synthetic rubber, while it might be of use for such purposes as insulation in electric work, would not be sufficiently strong for rough wear as in tires, etc. This is altogether a wrong suggestion. Synthetic rubber is rubber, and rubber only, and should be as well adapted for all work in which rubber is used as the natural product.

The basis from which we finally produce rubber is isoprene. This is converted into rubber by a process of polymerization, that is to say, two or more molecules become linked together, the component elements simultaneously assuming a different configuration. This reaction may thus be graphically represented:



Precisely what value x has or whether the first and last carbon atoms are linked together to form a ring is still a matter of uncertainty, and need not be further discussed here.

Synthetic rubber, then, is obtained from Isoprene by a process of polymerization. It will be found to possess the same physical features and constitution as natural rubber, and may be used for the same purposes and in the same way.

Although the process is patented in England and Germany, and patents are pending all over the world, we are unable at this stage to give the names of the materials used, as it is obvious that some reserve must be maintained in this relation. The raw materials have a commercial value, and there is not an unlimited supply; and although the quantity available is very considerable, the sudden demand for thousands of tons would cause the price to rise; so that the quantity of rubber it would eventually pay to manufacture would depend on the price of the natural product.

The cost of manufacture also depends so much on variable conditions that only a rough approximation can be arrived at at this stage. Also by-products have to be considered, and until the market values of these are established on a manufacturing scale, it is impossible to state an exact price at which the finished product can be produced. Taking all known data into account, however, we arrive at a cost of about 17 cents per lb. for Isoprene, so that 20 cents may be regarded as a very conservative estimate.

As regards the conversion of Isoprene into rubber, there is yet much work to be done, both as regards yield and purity. At present, it is questionable whether the synthetic product could be manufactured to compete with the natural even at present prices. We have, however, made great strides of late, and are now able

to produce a hard rubber quite distinct from the soft and sticky material so lacking in strength, which is all that has heretofore been synthetically produced.

The process is absolutely unburdened in any way; no expenditure other than that directly necessary to the pursuance of the work and obtaining of the patents having been incurred; the results have proved so promising that it has been decided to form a small powerful syndicate to pursue a more energetic policy.

In conclusion, it should be clearly pointed out that no suggestion as to the possibility of synthetic rubber ousting the natural product from the market is entertained. Thus, although there is every prospect of this process becoming of the greatest commercial importance, we deprecate any suggestion that these statements be made the cause of apprehension on the part of planters or shareholders in rubber companies.

Dr. Heinemann, of the Caoutchouc Syndicate, when interviewed by an INDIA RUBBER WORLD correspondent gave out the following:

"Regarding the manufacture of isoprene rubber, the present method adopted to manufacture isoprene consists in the destructive distillation of turpentine by passing the turpentine over contact substances like copper or silver which allow a lower temperature, so as to prevent the polymerization of the already formed isoprene. The yield obtained varies according to the turpentine used. American gives, of course, a higher yield of isoprene than Russian. This depends on the quantity of pineine present. (See English patent 14040/1910. American patent not yet published.)

"Another method is the conversion of carbohydrates like starch, sawdust, etc., into isoprene by first making laevulinic acid and the latter being transformed into thioholene, which is again reduced to isoprene. A full description of this process is published in the English patent No. 13252, 1908, and the American patent No. 951,072. Either of the above mentioned methods is fully satisfactory, so that isoprene can now be called a commercial article.

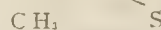
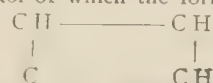
"The conversion of isoprene into rubber is, of course, quite well known, but our method is in so far new as I have succeeded in improving the process, that is, I get a better yield in rubber from isoprene in a short period of time.

"One of our processes consists in treating the isoprene with ozone, followed by heating the ozonized isoprene. (English patent No. 14041, 1910, American patent not yet printed.) A second way of polymerization is the treatment of the isoprene with certain organic substances to gain a material absolutely like the natural, genuine rubber. (Patent applied for.)

"Either method gives a yield of about 40 to 50 per cent. of rubber. The cost of material for producing one pound of isoprene is about 6 cents whilst the cost of the pound of rubber is 12 cents. This sum, of course, does not include expenses of manufacture, etc., which will be about 4 to 6 cents per pound."

The German chemists say of the process:

"The Caoutchouc Syndicate employs, ostensibly, as the basic material for the production of isoprene, carbohydrates (sawdust, starch, sugar) from which in a manner that could not be definitely ascertained, with laevulinic acid $\text{CH}_3 \text{ CO CH}_2 \text{ CH}_2 \text{ CO OH}$ and the thiol of which the formula is:



isoprene was produced. The firm exhibit large quantities of isoprene and samples of synthetic rubber. Ostensibly 4.409

pounds of starch should yield about 7.91 ounces of rubber at a cost of about 20 cents per pound. The company also obtains, by splitting up raw Russian oil of turpentine, isoprene to the extent of a yield of 15 per cent., the isoprene can then be transformed into rubber with a yield of 50 per cent. As a by-product there is obtained a highly valuable refined oil of turpentine."

BARROWS' REVIEW ON SYNTHETIC RUBBER.

In a paper which recently appeared in the *Armour Engineer*, the general question of synthetic rubber has been discussed in the form of an able review of the technical literature on the subject, by Mr. Frank E. Barrows, formerly of the Class of 1910 at the Armour Institute of Technology, and now an assistant examiner at the United States Patent Office, Washington, District of Columbia.

WHAT IS SYNTHETIC RUBBER?

Synthetic rubber had been defined by the *India Rubber Journal*, in 1907, as "a substance built up by chemical means . . . and possessing all the physical and chemical properties of the natural rubber." Mr. Barrows considers it necessary to modify this definition. While retaining in its exact form the reference to physical properties, he proposes enlarging the scope of the other reference, so as to include chemical properties, either identical with or analogous to those of natural rubber. These requirements would seem to be met by the four hydro-carbons intimately connected with the production of synthetic rubber—isoprene, diisopropenyl, erythrene and piperylene—between all of which there is a close relation, as shown by Mr. Barrows's detailed references. It would, however, seem that by reason of the closer attention which has been paid to it by chemists, isoprene has become the most familiar of these, and the problems of its production and utilization have, therefore, been most prominent in the technical literature on the subject.

ISOPRENE KNOWN FIFTY YEARS AGO.

It had long been known to chemists, through experiment, that isoprene (itself one of the products of the destructive distillation of rubber), could, under suitable conditions, be again converted into rubber by polymerization. As early as 1860, both these processes were described by Greville Williams (*Journal of the Chemical Society*, vol. xv., p. 110). In 1879, Bouchardet also described the polymerization of isoprene, the properties recorded seeming to identify this isoprene polymer with the parent material of the isoprene itself—rubber.

In view, apparently, of the high cost involved by the production of isoprene through the distillation of rubber, attention was given to other sources from which that agent could be obtained. Thus, Professor Tilden, in 1882 and 1884, recorded experiments in the depolymerization of turpentine and the decomposition of turpentine vapors by heat. In 1885 Wallach, a German chemist, found that after the exposure of isoprene to the light and upon the addition of alcohol, a rubber-like mass was developed, which hardened on exposure to the air. In 1892, apparently unaware of Wallach's observations, Tilden specifically reported the spontaneous polymerization of isoprene, which had been obtained from turpentine.

Harries, Pickles, and others have since described the polymerization of isoprene, claiming that the trials made identified the product as the same in composition and properties as natural rubber. Other extracts from the technical literature on the subject deal with further researches by Pickles, Lebedoff and Wechsler; as well as those of Henrichsen, affecting the ozone process.

SAME FORMULA FOR SYNTHETIC AND NATURAL RUBBER.

As Mr. Barrows remarks: "It is natural that the term, 'synthetic rubber,' should first suggest the product made from isoprene . . . It is known that the rubber from isoprene has the same percentage, composition, and hence empirical formula, as natural rubber ($C_{10}H_{18}$). It should follow that the rubbers from

erythrene, piperylene and diisopropenyl should also have the same empirical formula as the hydro-carbons from which derived."

PATENT LITERATURE ON SYNTHETIC RUBBER.

Turning from periodical to patent literature, Mr. Barrows quotes the principal features of the following patents referring to synthetic rubber:

(a) British patent to St. George, No. 15,544, of 1892; 'condensation of turpentine by means of hydro-chloric acid.

(b) Heinemann patents, British, No. 21,772, of 1907, and French, No. 394,795; condensation of isoprene to caoutchouc by concentrated hydro-chloric acid.

(c) French patent, No. 417,170, to Badische Anilin and Soda Fabrik; the caoutchouc being separated by precipitation with alcohol, or by steam distillation of the unchanged isoprene.

(d) The polymerisation of diisopropenyl, described in British patent No. 14,281, of 1910, and French patent No. 417,768, of 1911, to the Badische Anilin and Soda Fabrik.

(e) The polymerisation of erythrene, according to the British patent No. 15,254, of 1909, to the Farben Fabriken, of Elberfeld, is also specially mentioned by Mr. Barrows, who remarks that erythrene is the mother substance of both isoprene and diisopropenyl (two of the four hydro-carbons named).

Such are the salient parts of Mr. Barrows' review of the synthetic rubber question, as reflected in the technical literature on the subject. This review is not offered as a final solution, but for the purpose of making clearer the various issues under discussion.

A PRACTICAL MANUFACTURER ON SYNTHETIC RUBBER.

In a recent issue of "Kunststoffe," Dr. Gerlach, of the Continental Caoutchouc and Gutta-Percha Company, Hannover, Germany, makes the following statement:

"The problem of producing caoutchouc synthetically has been solved. But just as in the case of indigo, twenty years lapsed before the synthetic product was successfully launched, it will take perhaps longer with caoutchouc because the physical properties of this material are not as well known as those of indigo. The high price of the natural product, stimulated research, and after the pioneering experiments of Harries, the Elberfeld Farbenfabriken have finally succeeded in producing larger quantities of a product derived from a material closely related to isoprene. At this stage of the development it was found out that there exist many sorts of rubber which are near relatives, but still possess different characteristics.

"The first synthetic caoutchouc which was placed at my disposal, for example, did not unite with sulphur and had a leathery appearance. This was not to be wondered at, as there are known some varieties of natural caoutchouc which cannot be vulcanized. Soon another sort of rubber came to my notice which showed better affinity for sulphur, but still could not be perfectly vulcanized. Above all, it lacked elasticity. Soon, however, larger quantities of a third sort were submitted to me which, to my great astonishment, showed all the excellent properties of natural rubber.

"But now the question arises whether this material of the Elberfelden can be economically produced on a large scale and may thus become a danger for natural rubber. It cannot be denied that the substance, which possesses good qualities, can be utilized for practical purposes. Its price is not high, but it is a complex question to decide whether this synthetical product will become a danger to natural rubber. All kinds of economical and commercial conditions must be taken into consideration. One thing, however, is certain, that synthetic rubber will soon be a commercial article."

THE accepted authority on South American rubber—"The Rubber Country of the Amazon," by Henry C. Pearson.

RECENT ENGLISH SYNTHETIC RUBBER PATENTS.

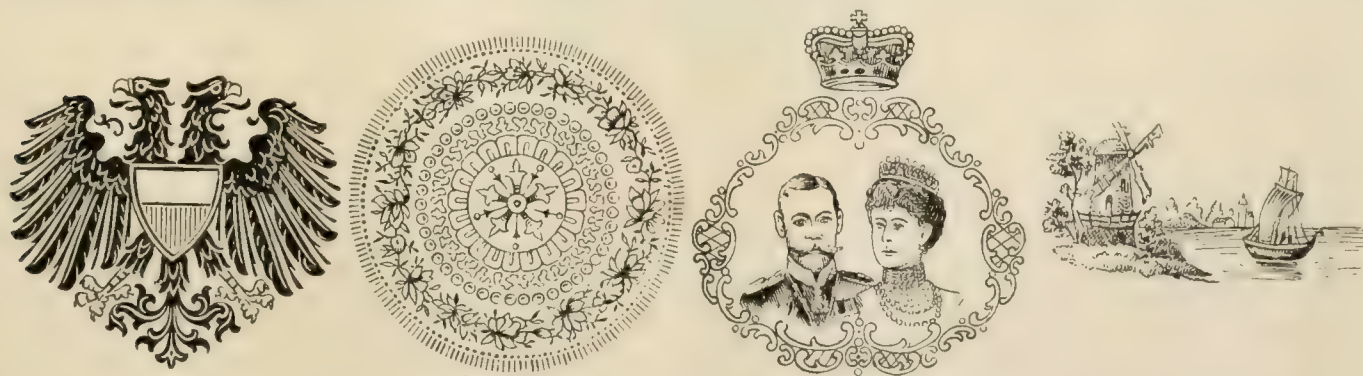
14,281/1910	Badische Anilin & Soda Fabrik.....	Substances resembling rubber.
27,398/1909	E. Black, London..... } G. A. Morton, Liverpool }	Use of isoprene or "Mortonene" with hemiterpenes or certain carbohydrates.
4,001/1910	Oswald Silberrad, Silberrad Research Laboratories, Buckhurst Hill	Improvement in manufacture of isoprene from turpentine.
29,277/1909	George Lilley, Chemist to Synthetic Rubber Co., London	Manufacture of mesoprene.
29,666/1909	F. E. Matthews... } E. H. Strange..... }	London Synthetic manufacture of isoprene and rubber.
4,572/1910	F. E. Matthews... } E. H. Strange..... }	London Synthetic manufacture of isoprene and rubber from amylic alcohols.
4,620/1910	F. E. Matthews... } E. H. Strange..... }	London Manufacture of rubber and intermediate product from rosin.
25,087/1910	G. Reynaud, 5 Rue Salneuve, Paris.....	Treating turpentine with hydrochloric acid for industrial manufacture of rubber.
4,189/1910	F. E. Matthews... } E. H. Strange..... }	London Production of isoprene (and rubber therefrom) from petroleum.
17,734/1910	Farben Fabriken, Elberfeld.....	Result from heating isoprene.
15,254/1910	Farben Fabriken, Elberfeld.....	Treatment of erythrene, etc.
25,850/1910	Do Do	Do Do
6,540/1911	Do Do	Do Do
6,642/1911	Do Do	Do Do
5,931/1910	W. H. Perkin..... } Charles Weigmann } F. E. Matthews... } E. H. Strange..... }	Manchester } London } Improvements in synthetic manufacture of rubber.
5,932/1910	Do	Synthetic manufacture of isoprene and rubber.
14,040/1910	Arthur Heinemann, London.....	Improvements in production of isoprene.
14,041/1910	Arthur Heinemann, London.....	Polymerization of isoprene.

RUBBER STAMPS IN POTTERY DECORATION.

WHILE the industrial use of rubber stamps was originally confined to purposes of a practical and utilitarian character, their application to ornament and decorate is of more recent date. The reproduction of designs, as to its detailed methods, is necessarily influenced by the character of the material which is to receive the impression. While rigidity is in many cases desirable in the stamp, in others the opposite qualities of

plied by hand to low-class ceramic articles displayed limited taste and skill. To render it possible to bring out in such ware the artistic effects now called for in staple ceramic products it was necessary to bring out in a suitable material a range of ornamental stamps, for the reproduction at nominal cost of designs at the same time of artistic and pleasing character.

"Such an object has been fully and successfully accomplished by the German firm of J. Bergeon, established in 1878, and making a specialty of decorative stamps, composed of pliable vulcan-



RUBBER STAMPS FOR DECORATING POTTERY.

pliancy and elasticity have been called for. Rubber, it has been conceded, displays in the highest degree the last-named characteristics.

In no branch of manufacture has the latter need been more useful than in the ceramic and glass industries. "The Pottery, Glass and Brass Salesman" says of ceramic rubber stamps:

"With the object of placing at the disposal of the masses the highest forms of modern decorative art, the ceramic industry had to find a material suitable for use in processes of rapid and economical reproduction. This requirement has been fully met by the employment of rubber, the pliability and durability of which rendered it specially adapted for the purpose in question.

"In the old days, from motives of economy, the decoration ap-

plied by hand to low-class ceramic articles displayed limited taste and skill. To render it possible to bring out in such ware the artistic effects now called for in staple ceramic products it was necessary to bring out in a suitable material a range of ornamental stamps, for the reproduction at nominal cost of designs at the same time of artistic and pleasing character.

Among the principal advantages claimed for these ornamental rubber stamps is clearness and sharpness of outline, even in designs of a complicated character nature. By the courtesy of the journal already referred to, a few specimens are reproduced, illustrating some of the results obtained by the skilled and intelligent use of rubber stamps for ceramic decoration. The designs run into thousands. They are infinitely diversified, embracing all sorts of ornate designs in scroll work, geometric figures, coats of arms, portraits, landscapes, etc. They vary in size from 1 inch square to a foot square.

Progress of Rubber Planting.

AMERICAN HEVEA GROWERS.

THE Waterhouse Brothers, of Honolulu, have long been well known as successful planters of *Ceara* rubber in the Hawaiian Islands. They are also large planters of *Hevea* in the Malay States. Two years ago THE INDIA RUBBER WORLD published a picture of a *Hevea* tree eighteen months old on the Pahang plantations, situated about 60 miles from Kuala Lumpur. For the sake of comparison, the picture of this tree is again published by the side of one of the same tree taken in January, 1911, showing it matured and marked ready for tapping. The two illustrations show a most satisfactory growth.

The Pahang Rubber Company, Limited, are tapping 10,000 trees.

be found for rubber, or the demand will not equal the supply. Whether or not this estimate is correct, it places the anticipated 1916 Asiatic production at about the figure of Mr. Rutherford, or at half that of Sir John Anderson, lately High Commissioner.

The aggregate exports of the Malay States had risen from the equivalent of \$6,500,000, in 1882, to \$69,765,820 in 1909.

The revenue of the three States composing the Federation, which, in 1875, equaled about \$405,000, had increased by 1909 to \$14,727,285. All the public works done in the country have been paid for out of revenue; there being no public debt. Its area is about 26,000 square miles (slightly larger than that of West Virginia).



TAPPING ON TANJONG OLOK
RUBBER PLANTATION.



PAHANG PLANTATION.
Hevea Tree 18 Months old. June, 1909.



PAHANG PLANTATION.
Same Hevea Tree. January, 1911.

and expect, during this year, to market about 18,000 pounds of rubber. This company owns some 2,000 acres of land, more than one-half of which is already planted.

The same group of Americans own the Tanjong Olak rubber plantation which has 1,450 acres on the Muar River in the State of Johore. This land is all planted to rubber. The group of Americans, all of whom are residents of Honolulu, who are successfully promoting these planting enterprises are: P. R. Isenberg, president; G. N. Wilcox, vice-president; Albert Waterhouse, secretary; Fred T. P. Waterhouse, treasurer; E. A. Knudsen, G. G. Fuller, C. R. Hemenway, directors.

PAST AND PRESENT OF THE MALAY STATES.

Dealing with the "Past and Present of the Malay States," a writer in the *Australasian* states that there are now in that country 500,400 acres under cultivation for rubber, of which 196,950 acres had been planted by the end of 1909. The capital of the 110 companies of that class listed by the London Stock Exchange, equalling about \$50,000,000, it is estimated that the aggregate capital of the 377 "Malay" companies cannot be far short of \$140,000,000.

Regarding production, the writer expresses the anticipation that within five years the yield from 250,000 acres will reach to 34,000 tons, or about half the amount of the world's present consumption. Thus, it is added, by 1916 many new uses must

WHAT RUBBER DID FOR PERAK.

According to the report of Mr. E. W. Birch, for years British resident in Perak (one of the three Federated Malay States), the cultivation of rubber has there made wonderful strides; the lucrative results attained by various Malay planters having encouraged the acquisition, by various nationalities, of land suitable for planting rubber. He urges the need of government legislation providing for the planting of cocoanut trees. Thus preventing large estates from being surrounded by patches of native-grown rubber.

"AN OBLIGING MAN."

According to the "Malay Mail," the directors of the Ayer Panas Rubber Estates, Limited, had, at the recent extraordinary meeting, held at Singapore, the unpleasant task of announcing the misappropriation by the late Secretary, Mr. A. A. Gunn, of monies equalling nearly \$30,000 gold. According to the Chairman's explanation, Mr. Gunn had been a "very obliging man" in helping sea-faring friends in the detailed formalities of securing allotments, and then paying their checks in his favor into his private account.

The main defalcations had been in misusing the proceeds of rubber and tapioca sales, the checks for which were, according to custom, made payable to him, and were deposited by him in his own bank.

By unanimous resolution, it was decided to issue shares to *bona-fide* applicants, who would otherwise have been sufferers. It is understood that 10 per cent. of the amount misapplied has been refunded. There are expectations of getting back in all 30 to 40 per cent. For the purpose of covering the losses incurred and providing for various liabilities, the issue of debentures up to \$75,000 gold, was decided upon by a majority of 19 to 5.

THREE VIEWS OF THE RUBBER SITUATION.

In quoting a Brazilian report indicating the officially admitted necessity of Federal and State co-operation, for the relief of the rubber crisis, the "Panama Star" lately enunciated the view "that the big rubber manufacturing interests, particularly in America, have the whip hand, and may succeed in smashing the market to the extent that rubber will be available at somewhat near a fair price at all seasons of the year."

During a recent interview with a representative of the "Times of Ceylon," Mr. W. E. Byles, of W. E. Byles & Company, New York, expressed the opinion that American manufacturers have a good deal of rubber in stock, and were convinced they would get rubber a good deal cheaper by waiting. Regarding business generally, he considered America is in a strong position, and may expect a trade revival before very long, in which rubber should share.

The letter of Mr. A. S. Paxendah, a Singapore rubber estate valuer and expert, published in the London "Times," reports as follows:

"Having sought the views of rubber manufacturers and others in the trade, I have found the opinion is strongly held that the average price during the next five years will not be below 3s. 6d. (\$0.879 gold).

"It is, however, added that before any vast increase in demand takes place, manufacturers must be convinced that the price of rubber is not to be subject to quick and large fluctuations."

RUBBER IN BRITISH EAST AFRICA.

While the potential importance of British East Africa (as the "Daily Mail" of London remarks) lies in its unequaled range of altitude and climate, the tropical coast belt, though far from healthy, is remarkably fertile. No traveler on the railway can fail to be struck by the number of young rubber plantations springing up, while cocoanut and its by-products do extremely well, by reason of the coral subsoil. The coast belt, while it has excellent prospects, is, however, unsuited for colonization, in connection with which the real future of the protectorates is said to lie in the Highlands, with an altitude of 5,000 to 8,000 feet.

GERMAN WEST AFRICA RUBBER CULTIVATION.

Some interesting statements by Mr. A. Strauss, manager of an extensive rubber and cocoa estate in the Cameroons, who recently visited the East, have attracted attention. German enterprise is said to have done much for that part of Africa, since the colony came under white rule in 1884. Ten years since, planters began the cultivation of *Funtumia Elastica*, but some four years ago they took up *Hevea*. The 25,000 acres now planted with rubber are one-half in each of the above named descriptions.

About 72 tons of plantation rubber have, up to the present, been exported from German West Africa, but a much larger export is anticipated for 1912. At the same time the rubber output from that quarter would, Mr. Strauss considered, for some years, have no effect on the world's supply. In some of the German West African colonies good forest rubber is being obtained, but the production is going back every year. Labor, he added, constitutes the principal difficulty to be met.

"THE" BARBADOS, RUBBER AND BALATA.

An esteemed contemporary publishes the following under the heading "Rubber and Balata": "These two products showed a slight falling off last year in the Barbados, though the market price for rubber was high. This shortage of output may be due

to accidental causes, as the cultivation of rubber and balata is being encouraged both by systematic investigations by the agricultural societies and by government aid and outside capital. New companies have been formed, which indicates a large accession of capital to the cultivation. It is safe to predict that the next few years will show a much larger proportion of the exports of the colony from these two sources."—*Dept. Labor and Commerce.*

First, don't say *the* Barbados, unless you are willing to say *the* Cuba, *the* Jamaica, etc. Next, there are but three rubber trees in Barbados and they have to be coaxed to continue living. There never was any balata there. No cultivation of either rubber or balata is even remotely thought of. Soil and climate are not adapted, and—did that come from the Department of Commerce and Labor anyhow?

RUBBER PLANTING INVESTMENT IN VERA CRUZ.

William W. Canada, United States Consul at Vera Cruz, Mexico, says: "The amount of American capital now invested in this industry, and in this consular jurisdiction, is a matter of conjecture only. The money invested by shareholders in the United States in rubber plantation schemes cannot be less than ten million dollars in gold. The amount actually employed in planting rubber, however, is quite another matter. It is my opinion that five hundred thousand dollars gold would about represent the sum actually employed in tree planting and cultivation.

"One of the reasons for this discrepancy between stocks sold and money invested in planting rubber is that, when it became evident to a number of companies that tried to raise rubber that their enterprises had resulted in failures, some of the companies diverted their capital into other channels, as, for instance, the planting of sugar-cane, sugar-making, and the production of alcohol."

[We should doubt the \$10,000,000 investment in the State of Vera Cruz, and for a guess would hazard the actual expenditure of about \$2,000,000 in real rubber planting there. But we are guessing just as the consul is.—*The Editor.*]

SUMATRA EXCELLENT FOR HEVEA.

The ideal land for growing rubber is an undulating and largely self-drained alluvial deposit, of an elevation of from 100 to 300 ft. above sea level. Upon the East Coast of Sumatra is, perhaps, the most ideal spot in the world for Hevea rubber plantations. In the first place, you have from the Simpang Kiri River in the northeast, to Rokan Kiri River on the same coast, about 300 miles south, a splendid undulating territory, marvelously drained, and, at the same time, irrigated by dozens of small rivers. You have an almost continual rainfall spread over the year; you are sheltered from all the great winds on the western side by the spine of mountains, which run the whole way from north to south of the island; and from the east you are protected by the Malay Peninsula; and then you have a large and industrious local population, and, close, handy, a further population of over 30,000,000 people in Java, under the same government, which is always prone to assist a company, whether English or Dutch, in the development of its estate.—*The Malay Mail.*

RUBBER FROM SOUTHERN BRAZIL.

In the official report on the trade of the consular district of Rio de Janeiro for the year 1910 and part of the year 1911, the British Vice-Consul at Cuyaba (Mr. John L. H. Atkinson) says:

Rubber continues to be the most important article of export from this State. Concessionaires sent their men into the woods fully a month earlier than is the custom, but the increase in the quantity exported only shows a slight advance upon previous years. It is remarkable to note that during the "boom," when a great number of rubber companies were floated on the British market, not even an inquiry, as far as I can ascertain, was made by British capitalists for lands in this State. I am of the opinion that under skilful management and with well-organized

transport, the output of any concession at present worked by native firms could be doubled. The exportation from the north of the State finds an outlet on the Amazon, and does not pass through Cuyaba. I consider that quite 50 per cent. of the rubber consigned to Monte Video from this district eventually finds its way to British markets. The total rubber exported of all qualities was: Uruguay, 264,325 kilos; Germany, 67,283 kilos; United Kingdom, 193,219 kilos; Belgium, 5,651 kilos.

AMERICAN PLANTERS IN THE PHILIPPINES.

The Bureau of Insular Affairs at Washington has lately issued a most informing bulletin on coconut growing in the Philippines. It is from the pen of the Hon. Dean C. Worcester, who has had the advantage of fifteen years' study of planting there. It is not our purpose here to treat the essay, excellent though it is, but to point to the ever growing interest in plantations of various sorts in the islands. We agree most heartily with the *Manilla Daily Mail*, which says:

The Philippine Islands offer one of the best fields in the world for the investment of capital in rubber growing, both the soil and the climate being adapted to rubber cultivation.

Some rubber plantations have been established by the far-seeing and enterprising, but the Philippines are capable of supplying the entire American market with rubber, and in the future may supply that demand, but the plantations now producing rubber are small compared to what might be accomplished in that line.

New syndicates are seeking investment in the islands, and a number of young plantations are coming along in a promising manner, but the cultivation of rubber in the Philippines is still in its infancy.

RUBBER GROWING IN PAPUA.

According to a statement of the British Cotton Growing Association, which is largely interested in the development of Papua, rubber is indigenous to that island. It is added, that in the opinion of experts, the Pará rubber tree attains maturity there earlier than in most tropical countries.

GUAYULERA STRIKE CALLED OFF.

The strike of seven hundred men on July 23 at the Guayulera Continental-Mexican rubber plant was of short duration. On July 30 it was decided that those who desired to return to work might do so without interference from the others. In consequence, a full force of men reported for duty on the morning of August 1.

TO RAISE PONTIANAK IN BORNEO.

The reported intention of the Netherlands-Indian Government to give a German combination a concession for the cultivation of six million acres of land in Borneo with Jelutong trees *Dyera costulata*, has aroused opposition in Holland. Mr. J. G. Schlimmer, a director of the Borneo Sumatra Handel Maatschappij, has issued a protest against the proposed concession. He states that the terms by which trees must be registered and other formalities observed, are of no consequence, as the Jelutong trees in Borneo and Sumatra are only growing in primeval forests, where a whole army of functionaries would be wanted to supervise the tapping. In his opinion, this concession will practically be a monopoly in favor of foreigners.

HOW MANY HEVEA SEEDS PER TREE.

A correspondent of the "Times of Ceylon" having stated that an average crop was 200 seeds per *Hevea* tree, another correspondent has disputed that assertion. From the experience of the latter writer, a few of his own trees, nearly thirty years old had yielded an annual crop of 4,000 to 10,000 seeds per tree. In commenting on this letter, the journal named remarks, that the yield of a few old trees must not be reckoned, but that of a considerable number, from six to eight years of age.

GOVERNMENT CO-OPERATION IN MALAY RUBBER CULTURE.

By the 1910 report of the Straits Settlements Forest Administration, it would seem that thinnings of useless species were in some instances made to give light to young gutta-percha trees with very beneficial results; the undergrowth interfering with gutta-percha and Pará trees being cleared. An increase was recorded of 45 per cent. in the yield of that rubber, as compared with 1909, from the Pará rubber trees in Ayer Kroh and Bukit Sebukor.

PLANTATION NOTES.

INTERNATIONAL RUBBER AND PRODUCE TRUST, LIMITED. At the second annual general meeting, held in London, July 28, a net revenue of £67,528 was reported, of which the directors recommended that £30,000 be placed to reserve and £37,583 carried forward to next year's account. The report and accounts were adopted.

KINTA KELLAS RUBBER ESTATES, Perak, Federated Malay States, reports for the year ending March, 31,874½ acres planted and 151,105 trees on the estate, of which 30,420 have been brought into tapping. The year's yield was 30,085 pounds, which realized, after deducting all charges, £7,361, the approximate cost of tapping and curing being 1s. 2d. per pound. The general manager's crop estimate for the current year is 60,000 pounds. The directors propose an interim dividend of 5 per cent. on account of the current year.

JERAN (SELANGOR) RUBBER ESTATES report the entire area of 1,039 acres planted. For the year ending March 31, 1911, the crop of dry rubber amounted to 14,152 pounds, against an estimate of 12,000 pounds, the selling price being 5s. 3¼d. per pound. The cost of the rubber, f.o.b. Port Swettenham, was 1s. 8½d. per pound; 22,431 trees were reported as under tapping on June 10, and the estimated crop of 35,000 pounds for the current year promised to be largely exceeded. From the amount standing to profit and loss (£2,556) the directors recommend the payment of a dividend at the rate of 5 per cent. per annum.

VALLAMBROSA RUBBER COMPANY reports 126,000 pounds of rubber harvested for four months ending July 31, 1911, compared with 132,000 pounds for the same period last year. Complaints are made of protracted drought.

SCOTTISH MALAY RUBBER COMPANY, LIMITED, reports 38,135 pounds of dry rubber harvested for seven months ending July 31, 1911, compared with 11,509 pounds for the corresponding period of 1910.

SAPUMALKANDE RUBBER COMPANY, LIMITED. For six months ended June 30, 37,778 pounds of rubber were harvested, of which, up to the beginning of August, 18,190 pounds had been sold at a gross average of 5s. 9d. per pound.

RIVERSIDE (SELANGOR) RUBBER COMPANY, LIMITED, harvested 23,557 pounds of dry rubber for seven months ending July 31.

THE LANGEN (JAVA) RUBBER ESTATES COMPANY, LIMITED, announces the issue of 2,500 6 per cent. second mortgage debentures of £10 each, the proceeds to be used for the improvement of the property.

THE ANGLO-MALAY RUBBER COMPANY, LIMITED, has declared an interim dividend of 15 per cent. in respect of the financial year ending December 31, 1911.

ULU BULOH (SELANGOR) RUBBER COMPANY, LIMITED. The directors' report, presented at the second annual general meeting of shareholders, held in Edinburgh, Scotland, June 26, shows a total acreage of 1,522 acres, of which 692½ acres are planted. Manager F. G. Harvey expected to have 12,000 trees ready for tapping July 1, from which he anticipated a yield of 12,000 pounds of rubber, before the end of 1911.

PERCIVAL FARQUHAR AND DR. CARLOS SAMPAIO, who are said to have been in treaty for the purchase of 9,884 acres of land in the district of Igarapé-Assú, have left Pará for Europe.

"PARA VERSUS CEYLON."

ONE of the principal factors in estimating the future of rubber, is the prospective increase in the Oriental supply. In his interesting review of the subject (in the Portuguese language), "Pará Versus Ceylão," Senhor J. A. Mendes, of Pará, has grouped a number of statistical returns; extending the scope of his observations so as to include the Asiatic yield in general.

WORLD'S PRODUCTION AND CONSUMPTION.

Taking the natural starting point, the record of the world's production and consumption during the five years preceding 1910, the following result is shown:



CULTIVATED "HEVEA BRASILIENSIS" AT THE EXPERIMENT GARDENS, PARA.

	Production tons.	Consumption tons.
1905.....	69,507	65,727
1906.....	67,918	71,671
1907.....	68,646	64,628
1908.....	67,031	67,081
1909.....	69,372	70,075

Production and consumption thus kept on about a level during this quinquennial period.

Calling the annual production for 1909, 70,000 tons, its sources are shown to be approximately:

	Tons.
South America	40,000
Central America, etc.....	12,800
Ceylon, Malay States, etc.....	6,500
Africa	10,700
Total tons.....	70,000

While a normal or moderate degree of increase might be witnessed from other sources, Senhor Mendes gives prominence to that anticipated from Asia.

ASIATIC EXPORTS OF RUBBER.

Although the 1909 amount quoted is somewhat less than that already shown in the general summary, the general statistical

bearing of the figures below is not affected; as embracing the aggregate exports of rubber from Ceylon, Malay States, Sumatra, Java, India, etc.

	Tons.
1905.....	145
1906.....	510
1907.....	1,010
1908.....	1,800
1909.....	3,600
1910 (estimated).....	8,000

The gradual increase recorded for the more recent years, is the direct result of the development of planting. This view of the case is supported by the statement that there are now in the Malay States and Ceylon, over 600,000 acres, planted with more than 21,000,000 *Hevea* trees, almost in a productive condition; to the relative maturity of part of which is due the augmented figure of rubber exports.

FUTURE OF THE ASIATIC RUBBER SUPPLY.

Passing from the field of statistical record to that of estimate, it is not surprising to find divergence of views as to the increase to be looked for within the next four or five years in Asiatic exports, while the general prospect of a larger Eastern yield does not seem to have been questioned. Two pertinent estimates are quoted in this connection to Senhor Mendes, that of Mr. Rutherford (a gentleman largely interested in Eastern plantations) being to the following effect:

	Tons.
1911.....	8,100
1912.....	12,100
1913.....	17,040
1914.....	22,670
1915.....	27,300
1916.....	35,620

Far in excess of these figures is the anticipation expressed by Sir John Anderson (when High Commissioner of the Federated Malay States), that by 1916, the Asiatic production would amount to 70,000 tons; that being, it will be noticed, just the amount of the world's yield in 1909. Applying the last named estimate to a forecast of the year 1915-1916, and contrasting the result thus anticipated, with the record for 1909, the following comparison is established:

	Production 1909 tons.	Estimate 1915/1916 tons.
South America.....	40,000	43,780
Orient	6,500	71,940
Africa, Central America, etc.....	23,500	26,522
Total tons.....	70,000	142,242
Estimated increase of product, 72,242 tons.		

COMPARISON OF BRAZILIAN AND ASIATIC QUALITIES.

While the question at issue has been mainly treated from a statistical point of view, an interesting and lengthy quotation from a recent article in the "Bulletin de l'Association des Planteurs de Caoutchouc," gives impartial prominence to a comparison drawn between the two classes of rubber. It points out that there is no chemical reason for preferring one or the other; both being of the same botanical family and produced under climatic conditions of a similar character. Moreover, it is added, there is no more difference between them than may be found between the products of different regions of the same country.

On the other hand, Senhor Mendes, while giving impartial prominence to the foregoing extract, urges the uniform character of the Pará article and the confidence in its use, which manufacturers feel after long years of experience. Reference is likewise made to the fluctuations which had, up to the time of writing occurred in the relative values of the two descriptions. These differences have, however, been more or less adjusted by later market developments.

Hence the statistical aspect of the case, apart from that of quality, calls for the prominent attention it has received.

THE QUESTION OF CONSUMPTION.

From figures already quoted, it will be seen that consumption in 1909 was 70,075 tons, as against production 69,372 tons. Whether the surplus to be figured upon is 70,000 tons or a smaller amount, at this point the question of consumption naturally arises and has been dealt with by Senhor Mendes. Taking for the future the basis of a 5 per cent. yearly advance on rate for 1909, he estimates consumption on the following scale:

	Tons.
1909.....	70,075
1910.....	73,573
1911.....	77,258
1912.....	81,121
1913.....	85,177
1914.....	89,436
1915.....	93,908

Deducting from the estimated production 142,242 tons the estimated consumption 93,908 tons, there would still remain in 1915 and 1916 a surplus production of 48,334 tons, should Sir John Anderson's anticipations be realized, or of 12,064 tons on the basis of Mr. Rutherford's predictions. The Asiatic supply is consequently the dominant factor in the situation.

ESTIMATED DECREASE IN AMAZONIAN PRODUCTION.

Of more immediate interest is the estimate by Senhor Mendes of the general result for the year 1910 and 1911, shown as follows in almost the last page of his work:

	1909/1910 tons.	1910/1911 tons.
World's production.....	70,000	70,000
Increase from the East.....		4,000
		74,000
Decrease from the Amazon (10% of 1909 amount as)		3,913
	70,000	70,087
Consumption	70,000	73,500
Shortage in production estimated 1910/1911		3,413

Against this shortage would come the excess in Pará stock, which was on January 1, 1911, 5,852 tons as compared with 3,278 tons a year earlier.

EFFECT OF ASIATIC INCREASE UPON BRAZILIAN RUBBER.

With reference to general prospects of the Brazilian product, it is remarked that the rubber from some *seringaes* or plantations may be exported at a profit, owing to its special quality, while the contrary may be the case with that from other locations, where labor is scarce and dear, should values decline through Asiatic competition, or should there be a reduction in demand concurrently with a large and increasing supply of the article. In these last expressions, Senhor Mendes has answered the question propounded by himself, of the probable outcome of present developments in the Orient. The final result will be decided by consumption.

BRAZIL AND THE MIDDLE EAST.

WHEN overtures were made to the Middle East plantation rubber interests to throw in their lot with the Brazilians by agreeing to a scheme for the marketing of the product, we ventured to maintain that such an amalgamation would not serve the best interests of the British investor. These interests are practically wholly centred in the plantation industry, and mostly in the industry as it exists in the Middle East. That these interests have suffered, and severely suffered, by the efforts made to rehabilitate the market value of the South American product is beyond question. That they would continue to suffer if any definite scheme for the joint marketing of the plantation and the South American products were adopted we most firmly believe. We desire to see the plantation product marketed in such a fashion as will admit of the highest legitimate profits obtainable accruing to the producers, who in this case are the plantation rubber companies primarily, but represent in reality thousands of British investors, who have found hundreds of thousands of pounds sterling. It will be seen by every Plantation Rubber shareholder what danger the future might contain for him were any selling agreement entered into at the present time with the wild rubber interests. It would mean not only an ever-recurring repetition of the state of affairs which has existed since the beginning of this year, but it would materially cripple the profit-earning powers of the plantations in years to come. For it would be inconceivable that the syndicate (regarding it as the Brazilian industry for the moment) would agree to any division of marketable supplies unless this division was based upon South American potentialities in this connection existing at present and likely to continue to exist for some time to come. Able, too, to insist upon such a recognition, the syndicate would be, for it could always bring the out-of-hand marketing of its held-up supplies forward as a threat if its wishes were not fully accepted in the fixing up of such an agreement.

Those who favor the adoption of a joint selling agreement for rubber have been pointing out that the danger which we see in such an arrangement could be obviated by a recognition of the supremacy of the plantations as producers some years hence. Without doubt, such a clause or clauses could be inserted in any such agreement. But the value of them? Surely the wildest optimist among plantation rubber shareholders must acknowledge the time will come when the selling price of the commodity will fall to a level that will admit of the product being sold at a profit only when working costs are low—say, at highest, about 1s. 6d. per lb. It has been alleged that when the time comes the Brazilian collection costs can be reduced to at least the maximum level we have just indicated. How far this allegation can be said to have a basis upon truth it is not very easy to say, but anyone at all acquainted with existing Amazon conditions would be among the first to admit that any such reduction is impossible to contemplate as probable for years to come. Furthermore, the prospects of remission of taxation being a factor in the bringing about of reduced costs may be dismissed as chimerical. The tendency, indeed, would be all the other way, since, without their revenues from their rubber export taxes, the Brazilian rubber States would be in worse financial positions than they acknowledge themselves to be to-day, and these positions are just as bad as they very well could be. It would be, consequently, one of the main objects of some of the partners in a joint selling arrangement to maintain prices at levels which would admit of their product being sold at a profit. The attainment of this end could only be achieved to the detriment of the other partners' interests; so it is permissible to ask, we think, how long such an arrangement could be expected to continue. We have asserted—and they have accepted our assertion as fact by their silence—that, in scheming out the operations in connection with

South American rubber prices this year, they over-looked plantation rubber as a factor in their calculations, or treated it is something negligible. Plantation rubber supplies more than anything else have contributed to the failure of their scheme, and may be responsible for the ultimate abandonment of it. Whether or no this means ruin to some of those who are implicated in it matters nothing to the plantation rubber shareholder, but what should matter to him would be the acceptance of any proposal to have the rubber market at the moment calculated to retain influences which could not fail to prejudice his interests in the future.—*The Financier*, London.

BALATA AND RUBBER IN BRITISH GUIANA.

RUBBER is constantly engaging attention in British Guiana, it being there anticipated that the Colony will eventually have to be reckoned with by the other rubber producing countries.

Some 800 acres are said to have been cleared at the Liberty Island property of the Essequibo Rubber and Tobacco Estates, Limited, on which 20,000 *Hevea Brasiliensis* rubber trees and 10,000 coconut, lime and other trees have been planted, and are doing well. The total rainfall for the six months, January to June, amounted to 85.14 inches, which is considered nearly ideal for rubber cultivation.

The Bartica Company, on the Essequibo river, has felled 700 acres of forest and have 600 ready for planting to *Hevea* rubber. They report 90,000 Pará seedlings now in their nursery, and expect to receive in October 200,000 Pará seeds.

The Department of Agriculture had perhaps 20,000 young *Hevea* seedlings at the beginning of the season. According to a recent visitor to Georgetown, if they had possessed a million the planters would have taken them, so great is the present interest in rubber culture.

BALATA AS A FACTOR OF BRITISH GUIANA TRADE.

The value attached to balata as a factor in the trade of British Guiana is illustrated by the following editorial comments in the "Daily Argosy" on the statistical returns for the last five years: "Balata is the sole item, the trade in which has extended to a degree of any importance; the increase in quantity for the fiscal year 1910-1911, compared with 1909-1910, being 10 per cent., while the increase in value reached the substantial figure of 43 per cent. . . . Balata, by which great store is set just now. . . . seems to be the heir apparent to the position which gold is abdicating. . . . The output has increased within five years from 634,242 lbs. to 1,162,588 lbs., or by 83 per cent. . . . while the value of the output has risen 178 per cent."

A little sound advice is tendered, which planters in all parts of the world might advantageously take to heart: "There is a danger attaching to this kind of property. The intoxication engendered by it may easily encourage extravagance, and allow of slackness of management which would not be tolerated in times of stress."

By the latest official statistics a diminution is recorded in the aggregate exports of balata from British Guiana, between January 1 and June 7 of this year, as compared with the similar period of last year. The respective quantities were: 1910, 166,300 lbs.; 1911, 136,000 lbs.; the decrease thus being equal to about 18 per cent. This reduction is attributed to prospecting and preparatory work having interfered with the actual collection of latex. By the latest accounts, more activity was noticeable in the last named direction, an early revival of exports being anticipated.

BRITTLE BALATA.

There are in British Guiana many trees that furnish what is known as "brittle" balata because of its resinous character. It is useless for commercial purposes. Mr. G. R. Stevenson, of Georgetown, professes to treat the latex and turn out good balata.

Interviewed by a *Daily Argosy* representative, he gave the

following particulars: "When I went up the Barima river I collected some of the latex of 'brittle' balata trees and I also got some 'brittle' balata from Mr. G. C. Benson, of the Edward Maurer Co. I won't tell in what way I did it, but I succeeded in inventing a process of converting it into balata of the purest kind."

Mr. Stevenson produced a biscuit of the balata which had come through his process and flapped it before the eyes of the interviewer. It was rubber-pink in color, and the way in which it bent as the inventor flapped it about was proof positive that there was absolutely no brittleness to it.

Continuing, Mr. Stevenson said: "In the forests of British Guiana there are vast areas of 'brittle' balata trees. If the latex is collected from those trees and subjected to my process the export of balata would go up considerably, and a new and remunerative industry would be established.

"I have succeeded also in discovering a process for preparing for the market a certain kind of rubber that is found here. The latex is obtained from a kind of *Sapium* tree commonly called 'Moboia,' which also abounds in various parts of the colony."

Mr. Stevenson describes his process as a chemical one, very simple, the cost of treatment being about one cent a pound.

BRITISH GUIANA REVENUE FROM BALATA DUTY.

The original estimates of the revenue for the Government of British Guiana to be anticipated from the balata duty seem likely to be materially exceeded by the actual receipts from that source. It is anticipated that the "Consolidated" will this year beat the record it created last year, while several companies formed in 1910 will collect a greater amount of balata than was previously possible.

THE AMSTERDAM BALATA COMPANY.

According to recent British Guiana advices it is understood that the Amsterdam Balata Co. has practically pledged itself to export a large quantity of the article in a given time, and that its shipments will very soon commence.

Mr. Van Flines, late of Surinam, is the local representative of the company, in connection with the management of which it is reported that an offer has been made to Mr. John Ogilvie, at present balata superintendent with Garnett & Co., Limited.

BRITISH GUIANA AND VENEZUELA BALATA.

THE question of repealing the ordinance prohibiting the importation of balata from Venezuela has been the subject of investigation by the Government of British Guiana. At a private meeting of the Balata Association, recently held at Georgetown, it is understood that, while the members were not opposed to repealing the ordinance, it was decided to send a letter to the Government containing certain suggestions.

According to a personal opinion previously expressed by a prominent authority it would be advisable for the Government to make regulations either to have Venezuela balata pass through some process of manufacture in British Guiana, or when shipped to have its origin clearly stated.

Of the many trophies presented at the International Rubber Exhibition in London, none was more artistic or attracted more attention than the President's Trophy, given by Sir Henry Blake, G. C. M. G. No entries were required for this trophy, a committee of judges awarding it after inspecting all of the exhibits. It fell to the lot of the Harburg and Vienna India Rubber Company, Limited, to win this trophy for the excellence of their varied exhibits of manufactured rubber goods.

ON JULY 1 A LAW IMPOSING AN EXPORT DUTY of 8 per cent., ad valorem, on all rubber exported from Peru went into effect. The valuations for the assessment of the duty will be fixed every two weeks by the treasury officials, on the basis of Liverpool quotations on rubber, cabled weekly from that city by the Peruvian consul.

INDIA RUBBER AND BALATA IN DUTCH GUIANA.

(By Our Regular Correspondent)

WE note from "De Rotterdammer Courant" that the directors of the Balata Compagnie Suriname have sent the following circular to their shareholders:

"When we took over the balata business of Messrs. J. G. von Hemert and Henri Benjamin it was agreed that the net profit over 1910 should belong to the new company, and vendors guaranteed that this profit should be at least \$72,360; and that balances and accounts should be controlled by Mr. W. Kreuh-niet, an accountant.

"This has been accomplished in Paramaribo, and Mr. Kreuh-niet has sent in his report. According to this report the gross profit has been \$186,405. Costs of exploitation and materials has been \$48,025. On advances to laborers a loss has been written off of \$18,936. With a small profit on the timber business of \$218, the total net profit has been \$119,613, or \$47,301 more than has been guaranteed.

"It must be understood that the first book year of the company will be closed on December 31, 1911, so this profit will be a part of profit and loss account of that year; also the results of the business over 1911, and will include also the dividends of the shares taken over from the Balata Compagnie Guyana."

Under separate cover I send you for your library a brochure on "Pará Rubber Culture in Surinam," by A. W. Drost, assistant agronom to the Department of Agriculture in Surinam. I am very sorry that this book seems to be made up in a hurried fashion. Where statements are given, the date is omitted. The English translation is very bad, and I fear very often you will have to guess at the meaning. Some pictures are very fine, and show the luxuriant growth of *Hevea* in Surinam. On one page you are promised a picture of a *Hevea*, banana and coffee field on Wederzorg, but you look for it in vain.

Of course, among all this interesting information, you will look out for the "Costs of Establishing a *Hevea* Plantation." Mr. Drost gives some interesting figures, and shows that the laying out and the upkeep of one hectare (2.3 acres) until *Hevea* is productive is \$473, and that this amount is covered by the profit on the catch crops. It is not the place here, says Mr. Drost, to give a detailed estimate of the costs which are required for the exploitation of *Hevea* plantations. Where is the place then?

Very impressive is the photo of nine-year-old *Heveas* with cocoa as a sub-planting on Jagdlust Estate. Mr. Drost is strongly advocating intercrops or catch crops while growing rubber. In this Dr. Cramer, our agricultural director, is the opponent of his assistant agronom, see his book on rubber cultivation, 1910. To whom shall the practical planter listen? The effects of most intercrops are certainly: that the growth is slower and the ultimate yield of rubber is less—you will never be able to cut three backs from one hog—but if a good market for catch crops is near, transport cheap and easy, laborers at hand, the profits on a catch crop can be so considerable that it is wise to plant them, even if it should delay the profitable tapping of rubber from five to seven years, as Mr. Drost asserts.

It is, however, an established and known fact that at some Surinam estates the tapping of five-year-old *Heveas* grown up with bananas has been very remunerative, and that under the most favorable conditions the first tapping of *Heveas* can take place even at the age of 3½ years.

HEARD ON THE PLANTATION.

First Rubber Tree.—"Isn't it awful! They are really producing synthetic rubber in England. Aren't you frightened?"

Second Rubber Tree.—"Yes, indeed! The very thought of it sends cold shivers down my back."

FORMIC ACID FOR LATEX COAGULATION.

THE problem of the best and cheapest coagulating agent has, it is claimed, been solved by the Fabrick van Chemioche Producten (Factory of Chemical Products), Schiedam, Holland, with its latest preparation of formic acid. Expert investigation having apparently demonstrated the advantages resulting from the use of acids in coagulation, the question of the most suitable one still remained for discussion.

On behalf of formic acid, it has been urged that it is not only the cheapest in price of the organic acids, but that it is more powerful in its action than other compounds of that class. The makers claim that they are in a position to offer a grade containing 90 per cent. of free acid, with specific gravity 1.20, 46 parts of which are theoretically equal to 60 of acetic acid .63 of oxalic acid, 70 of citric acid and 75 of tartaric acid. It is described as an effective and antiseptic coagulating agent, without any harmful effect upon the rubber and preventing agglutination. In view of the admittedly extensive use of acetic acid in the Federated Malayan States and in Ceylon, interest attaches to the statement that the tests of Spence prove that the rubber obtained by a treatment with formic acid is as good or rather better than the product obtained by the use of the other agent named.

Formic acid has only been used for technical purposes since the year 1903, when Dr. Goldschmidt discovered a cheap process for the manufacture in quantity of what had previously been a laboratory product.

In "Crude Rubber and Compounding Ingredients" (pp. 37 and 98) reference is made to the fact that formic acid had been suggested as an ideal precipitant for rubber milk, being used instead of acetic acid in coagulating *Hevea* latex.

RUBBER PLANTATIONS FOR BOSTON.

THE country newspapers are publishing an item to the effect that crude rubber, at the cost of 15 cents a pound, can be produced in the hot regions of the United States just as easily as corn can be raised. That is, according to the claims of an American who has been in Mexico several years experimenting with plants from which rubber could be taken in paying quantities. He claims to possess a tree, a vine and three small plants which may be cultivated by planting the seed or cuttings. The latex of the tree contains 6 per cent. of crude rubber. The vine may be grown on trellises and will give 8 per cent. of pure rubber. Both these rubber producers may be grown fit for cutting in three years, then trimmed to the roots each season and left to keep that process going for years.

According to weather reports Boston was the hottest place in the United States this summer. If Mayor Fitzgerald is in earnest in his efforts for a greater Boston he will at once cover the Common, the Public Gardens and the Fenway with these trees and vines.

QUITE RECENTLY AN illustrated lecture on india-rubber was given at the magnificent theatre da Paz, Pará, by Sr. Amando Mendes, the subjects being "Rubber Planting in the Far East" and "Rubber Manufacture in the United States." For the first lecture there were some 60 views covering the whole topic of rubber planting, tapping, coagulation, etc., in Ceylon and the Malay States. The second section which was introduced by a review of manufacture in the United States as a whole was illustrated by some 60 views showing processes in the leading factories throughout the country and then exterior views of the larger factories making rubber boots, shoes, tires, druggists' sundries, clothing, etc., etc. A very large audience was in attendance and much interest was shown. The lantern slides were prepared by the editor of THE INDIA RUBBER WORLD and presented by him to the Musen Goeldi in Pará.

Shall Crude Rubber Be Listed?

FOR several months there has been a movement on foot looking toward the listing of crude rubber on the New York Produce Exchange. As a preliminary to a thorough examination into the subject the INDIA RUBBER WORLD has secured opinions from a number of those most interested, rubber manufacturers and importers and exchange members.

THE PRODUCE EXCHANGE—A BRIEF DESCRIPTION.

The New York Produce Exchange is a great big market place. Nothing more, nothing less. On its floor wheat, corn, rye, oats, barley and other grains, flour, meal, hops, hay,

To trade with each other as principals and for others as brokers and commission men.

To make initial arrangements for the care of all the details incident to business transactions, such as freight engagements, insurance, inspection, warehousing, delivery, etc.

It is, moreover, a market place where all transactions are safeguarded; where men must deliver what they sell and pay for what they buy; where, by force of all the circumstances, honesty must prevail, for here customs of trade have crystallized into rule and regulation, all grades and qualities are carefully defined and all trade terms and phrases clearly understood.

Each one of the various trades, such as the Flour Trade, the



THE QUOTATION BOARD, NEW YORK PRODUCE EXCHANGE.

straw, seeds, pork, lard, all sorts of meat food products, tallow, greases, cottonseed oil and various other animal and vegetable oils, naval stores of all kinds, butter, cheese and other commodities are bought and sold in quantities ranging from a single package to whole cargoes.

It is a place where men engaged in various mercantile pursuits and in allied industries, gather for various purposes.

To keep in touch with each other and thus in touch with all that is going on in the business world.

To gather daily information concerning growing crops, stocks of merchandise, movements of produce, current quotations for all sorts of produce in all markets of the world.

Grain Trade, the Cotton Oil Trade, the Steamship Trade, etc., is to all intents and purposes an exchange by itself. Its members meet together in a given place on the floor. It is presided over by a trade committee, which interprets its rules and decides all disputes under the rules. It makes its own rules and regulations, subject to the approval of the board of managers; and in the making of its rules every trade member has a vote, thus making its rules the composite judgment of all interests concerned therein—great corporation, small dealer, buyer, seller, broker, commission man, exporter, etc.

Over and above these rules are the by laws and rules of the Exchange itself, apply to all trades and have to do largely

with the internal affairs of the corporation and its membership.

The Exchange itself is merely the organized machinery of a great market place. Its main chartered purposes are:

To maintain a suitable room for such market place.

To inculcate just and equitable principles in trade.

To establish and maintain uniformity in commercial usages.

To acquire, preserve and disseminate valuable business information, and

To adjust controversies and misunderstandings between persons engaged in business—and this is all that it does.

In discharging its functions, it appoints and licenses, on the nomination of the various trades concerned, inspectors and weighers; maintains a grain inspection bureau, a flour inspection bureau and a chemical bureau for the official analysis of certain food products. It provides machinery for the adoption of trade rules and their enforcement. These trade rules apply to the non-member as well as to the member, and the non-member as well as the member has the privilege of using the machinery provided by the Exchange to compel their enforcement.

Through its rules for the handling of business, large economies of labor and expense are effected, and it virtually becomes a great clearing house of commerce.

It has general agreements with warehousemen, with great railroad lines, with various steamship and other maritime interests, covering the general needs of the trade at large, and in many instances these agreements have resolved themselves into forms of bills of lading, charter parties, etc., and are used generally in the commerce of the port. Agreements with the railroad companies also provide for the grading of grain at the railroad terminals in such manner as to effect large economies in labor, expense and terminal space. In the matter of grain, even the charges for receiving, weighing, discharging, towing, lightering, blowing, screening or dusting, etc., are subject to general agreements entered into by the Exchange and the various interests concerned therein.

It takes a large interest in all matters pertaining to the development of the commerce of the port of New York, and is constantly striving to bring about improvements in the various trades in the manner and method of handling their business; and it co-operates with the public authorities in every public work looking to the improvement of conditions in this port, as, for instance, matters such as the new barge canal, adequate dock facilities, etc.

It may be of further interest to note a fact that all merchants are well aware of—that an open market in which there is large trading tends to minimize fluctuations in value. A narrow market means violent fluctuations, but a great, broad market, capable of absorbing all business thrown into it, reduces fluctuations in values to a minimum.

Of course, in the same degree that the Exchange makes trading easy and safe for the merchant, it makes trading easy and safe for the man of a speculative turn of mind who wishes to act on his judgment as to values in precisely the same way that the title guarantee and trust companies, in combination with great estates and other financial interests, making it easy and safe for a poor man to buy a home or for anybody to buy real estate, make it, in the same degree, easy and safe for the man of a speculative turn of mind to buy and hold real estate for an advance in value. In this connection it should be remembered that, though by the perfection of its machinery for the handling of business transactions, it enables men to make speculative purchases and sales, it also, by the same perfection of machinery, enables merchants to remove entirely the element of speculation from their business.

Such, in brief, is the New York Produce Exchange, and such are some of its functions. The institution itself is in excellent condition. It has a property large enough to act as a permanent

endowment, insuring its easy maintenance. Its membership is united in thought and purpose. Its gratuity problems have been practically solved, and the only problems confronting the new officials are those of administration, and to these problems we propose to give our best thought, care and attention.

EDWARD R. CARHART,
President New York Produce Exchange.

OPINIONS OF THE TRADE.

FROM A MEMBER OF THE PRODUCE EXCHANGE.

TO THE EDITOR OF THE INDIA RUBBER WORLD.

Sir:—Referring to your recent editorial regarding the listing of crude rubber, would say that I am comparatively new to the rubber business, most of my business experience having been in other lines. One of the first things that struck me, however, after getting interested in rubber, was that a manufacturer or dealer really has no way of hedging his purchases or sales. There is hardly another commodity traded in of the volume and value of rubber, without an open official trading market.

There is a market in London, but America, with all its vast rubber interests, has none, and it seems to me that we ought to have an open official market here and not be dependent on the speculative Englishman. America probably now is and surely will be the largest consumer of rubber and ought to lead rather than follow.

If a cotton manufacturer wants to book a big future order, say for next December, he can buy this cotton future in the open market and fix his cost of raw material at once and does not have to tie up all his capital either—really does not have to pay a cent, until his future purchase is due and delivered, just when he wants it.

A cotton oil refiner buys his crude oil based on the market of the future month, which will give him time to refine and deliver the refined oil against his future sale and the price he pays for the crude oil is the future price of month sold, less refining costs, freight and his manufacturing profit, thus eliminating all speculation from his business. If before delivery is due, the manufacturer can market his oil in domestic or export trade to better advantage than delivering against future sales, he simply sells the refined oil and buys back his future contract in the official trading market.

I know oil refiners that are never either long or short of oil—keep everything always hedged, both in buying and selling and thus assure at all times their manufacturing profit, and I may say right here that the more conservative a manufacturer is, the more he will make use of an open market when he can always buy or sell any trading future to hedge the purchases and sales of his factory. If he wants to speculate, he can and will do so as an individual and not involve his manufacturing business in a speculation.

It is the same way with provisions and grain. If a packer or shipper gets an export order, for say December shipment, he buys a December future, bases his selling price on the cost of the future—no money involved except market differences until time for shipment and whether the market advances or declines is really a matter of indifference to the shipper.

Whether or not as entirely satisfactory, a trading market can be developed in rubber, is for the future to decide. There may be some difficulties in determining grades and standards, units of trading, commissions, etc., but I see no insurmountable ones.

Then some will say an open market will tend to speculation, but so far as the manufacturer and dealer is concerned, it will have exactly the opposite effect; it will eliminate speculation if they take advantage of it. Nearly all business is more or less speculative—of necessity must be so. An open market certainly lends itself to speculation, but if one must speculate, and most people do at times, by all means trade in an open, active market,

where you not only can buy but can also sell and get out when you want to.

The open markets have their quotations generally published, so nearly every one hears of the fluctuations, but the fluctuations seldom compare with or are as wide as in commodities without the benefit of an open market. The speculator, pure and simple, is very apt to act as a governing valve—he makes it his business to get full and complete information of stocks, figures on demand and probable future supplies, and if the market goes to extremes, either way, either goes short or long as the case may be and checks the movement. Some of the big commission houses have their experts always in the field, going from crop to crop; cotton to corn and wheat and from country to country, reporting on crop conditions and reserves still in first hands. These reports come in continually and supplement the Government reports issued from time to time, so that the farmer in Kansas, as well as the trader in Chicago or New York, know at all times the conditions covering crops and stocks all over the world.

With an open active future trading market here, I do not think rubber, last year, would have sold up to \$3.00 per pound, as many traders would have sold it on the advance before it reached that limit which every one familiar with conditions felt was an artificial, hysterical price which could not be maintained, and a price which never should have obtained, and which was demoralizing to legitimate business and manufacturers.

The advantages of an exchange like the New York Produce Exchange is that it systemizes trading and enables traders in every commodity to trade under rules which all members have to live up to. It has committees to arbitrate and settle all disputes, without the delay and expense of the courts, and as the committees are business men, thoroughly conversant with trade customs and commodities, their decisions are very likely to be nearer exact justice than a judgment by a court based on technicalities or legal quibbles. The exchange has the machinery for collecting statistics from all markets and the statistics for another commodity can be easily added, at a minimum expense. This information is for the benefit of all members and probably would be much more complete than any now obtainable, except at a great expense for cables.

An exchange with regular trading hours also brings all the active traders in any commodity together, so that they can all get better acquainted with each other.

An exchange is nothing more or less than a common meeting place for the comfort and convenience of traders in a commodity where they can trade under equitable rules and with assurance that each and every trader will have to live up to his trades and obligations.

I feel that an open official spot and future trading market under the auspices of an exchange, with proper trade rules and committees to control trades, and its facilities to gather and disseminate information, would tend to broaden the interest in rubber—enable the manufacturer to eliminate speculation and prove beneficial to the trade in general. It has proved so with other commodities, and I think a fair trial with rubber would work out the same way.

Yours respectfully,

New York.

ARTHUR DYER.

TIME NOT RIPE YET.

Replying to your letter, my opinion is that the time is not yet ripe to list crude rubber on the New York Produce Exchange. At present the price of crude rubber is largely regulated by speculative influences and not by the natural law of supply and demand. I do not believe it would be for the good of the trade to enlarge the field for speculation.

If the present rate of increase in plantation receipts continues, we will soon have much greater stability in the market price of rubber. We could then discuss the advantages and disadvantages

of having it listed, but at present I do not believe that the Exchange could offer any inducements which would offset the harmful result of bringing more outside speculators into the field.

Very truly yours,

BERTRAM G. WORK,
President, The B. F. Goodrich Co., Akron, Ohio.

MARKET CONDITIONS DIFFERENT HERE.

Referring to your letter, I would say that I have delayed reply in order to give the matter thoughtful attention, which I have now done.

I cannot see how it would be of advantage to the manufacturers to have rubber listed upon the New York Produce Exchange. The business in this country is done on an entirely different basis than in other countries. Here it is done direct between importer and consumer. There it is done through brokers. In the foreign exchanges the broker having his orders to buy or his inquiry from the consumer for a price, goes to the Exchange at certain hours daily. The seller also passes certain hours daily "on 'change," and the two meet and make their trades together on the floor of the Exchange. Here manufacturers do not employ brokers, but the buying is done by the principals themselves, and these principals are too busy with the details of their manufacturing to pass their time at the Exchange, even if their headquarters were in New York, and, as you know a large part of the consumption of rubber is by people a long distance from New York, I doubt if any of the principals would care to entrust to others the buying of their rubber supplies. Unless these people would become members of the Exchange and pass their time on the floor, I cannot see how the listing of quotations could benefit them.

I can see where advantages could be derived through the establishment of boards of arbitration, of classification and inspection, but unless the rubber people should become members of the New York Produce Exchange and thus bear their share of the expenses of maintaining the Exchange, then that body would not, of course, be likely to interest themselves in the affairs of the rubber people, and I doubt if the latter could be made to see sufficient advantages to encourage them to the necessary expenditure.

Sincerely yours,

A. W. STEDMAN,
New York Commercial Co., New York.

FEAR IT WOULD ADD TO SPECULATION.

With regard to the subject of your letter, the writer has too little information to form an intelligent opinion as to whether the plan, if carried out, is liable to result to the benefit or detriment of rubber manufacturers and therefore, manifestly, is in no position to give an expression for publication. Beyond what you have written and the rumor that the subject had been mooted, we have no knowledge of the details of the plan or what would be involved. If the listing of crude rubber tended toward making the crude rubber business any more speculative than it is at present, as we fear it might, our opinion is that it would be detrimental to manufacturers' interests generally. However, it would be useless for the writer to attempt any opinion without more knowledge of the working plan.

Yours faithfully,

C. N. CANDEE,
Secretary and General Manager, The Gutta Percha & Rubber
Mfg. Co. of Toronto, Limited.

FAVORS SEPARATE ORGANIZATION.

Replying to yours of recent date, I beg to say that any action on the part of the users of crude rubber that would standardize the quality, regulate prices, and assimilate and distribute information, would be, in my judgment, a move in the right direc-

tion. Whether this could best be accomplished by the manufacturers of rubber joining the New York Produce Exchange, or whether it would be more advantageous to them to form a separate and distinct organization for this purpose, is a question that, to my mind, needs very careful consideration before any decision is rendered, but that something should be done to give the consumers of crude rubber a more comprehensive view of the situation, is imperative.

To that end, I think, it would be advisable for the manufacturers to hold a meeting and have the matter clearly presented to them, so that each one individually could take the matter under consideration and render his decision, after mature consideration.

Yours very truly,

Jos. O. STOKES,
President, Thermoid Rubber Co., Trenton, N. J.

WOULD FACILITATE SPECULATION.

We beg to acknowledge the receipt of your favor in reference to listing crude rubber on the New York Produce Exchange.

In reply to your request that we give you our ideas on this plan, would say that we are opposed to listing crude rubber on any Exchange in New York, as we believe it would facilitate speculation, and all manufacturers are now suffering severely from too much speculation in crude rubber.

We would prefer not to have our views published, but are willing to express them to anyone making inquiries.

FROM A LARGE MANUFACTURER OF INSULATED WIRE.

MARKET DIFFICULT TO CREATE.

Replying to yours as to listing crude rubber on the New York Produce Exchange, will say that, as a buyer of rubber, naturally I would be very glad to see a market for it in this city, but having had considerable experience on the exchanges in Wall Street, I realize how hard it is to create a new market for any material. It requires great perseverance and tact.

Should the plan prove successful, one great advantage would accrue to the small buyer, viz: he would have an opportunity to know the market price for the various grades of rubber in Brazil and abroad, as doubtless official telegraphic quotations would be kept in this city. As you know, at the present time only the very large buyers are in touch by cable with the rubber markets of the world.

R. E. GALLAHER,
New York Insulated Wire Co., New York.

DEPENDS UPON EFFECT.

I have your letter and, responding, have to say that I have given the subject no thought, and am not prepared at the moment to give an opinion as to the wisdom of opening a rubber exchange.

If such action would give stability to the market and minimize fluctuations in prices, I would be inclined to treat the matter favorably, but if its intent would be to stimulate speculation I would be opposed to it.

Very respectfully,

F. A. SEIBERLING,
President, The Goodyear Tire & Rubber Co., Akron, Ohio.

PRESENT METHODS SATISFACTORY.

Yours on the subject of listing crude rubber on the New York Produce Exchange received and noted. I really do not feel that I know enough about this matter to give an intelligent opinion for public or private circulation. As far as I can see the present methods of marketing crude rubber work out pretty satisfactorily, and I don't see what would be gained by a change of this sort.

A. F. TOWNSEND,
President, Manhattan Rubber Mfg. Co., New York, N. Y.

WOULD STOP LONDON MANIPULATION.

In reply to yours relative to a proposed plan to list crude rubber on the New York Produce Exchange, generally speaking, I think the move would be a good one, although in our particular line the consumption of rubber is not great, and for this reason think that our ideas should not be seriously considered or given any publicity. There might be an objection to listing rubber on account of the general information it will give the buying public, which information will create a tendency upon the part of the buyer to demand revised prices every time there is a drop of a cent or two in the price of crude. On the other hand, this cannot be a real objection for the reason that for many months past the rubber game has been given wide publicity by the press, and in many instances statements were made that were more injurious to the manufacturer than a true report of actual conditions.

In favor of listing rubber are two conditions that I believe the listing would have a tendency to overcome. The one is that at the present time the prices on crude are made in London, and the American manufacturer is a victim to a greater or less extent of the gambling tendencies of the London manipulators; the other, that the average manufacturer, especially the little fellow, who is not in direct touch with the market through a disinterested channel, must depend more or less on information furnished by the brokers, and this information is usually in keeping with the broker's ideas, or, rather, biased by his own position and the way he is "hooked up" with the market. I believe the time will come if the American manufacturer is placed in position to own his raw materials on as favorable a basis as his European competitors, and can secure facilities for transporting his merchandise and conducting his banking equal to the facilities they now enjoy, that Mr. American Rubber Manufacturer will secure at least his share of the world's rubber business, especially in Central and South America and the Far East.

FROM AN IMPORTANT RUBBER SUNDRIES MANUFACTURER.

WILL WELCOME ANY CHANGE.

Answering your inquiry as to the advisability from a manufacturer's standpoint of listing rubber on an exchange:

Rubber makes a good football and is peculiarly subject to acceleration upon the impact of a good strong kick. To see it go, when it moves in the right direction, is a joy to the big as well as to the small boy. The sport is a good one, but somehow it loses its zest to the manufacturer when he realizes that rubber, the basis of his business, has been converted into a speculative football, to which the necessities of his business compel him to cling for some three hundred and odd days in a year. He soon begins to realize in his own person somewhat of the punishment that the ball has to take.

I wish, therefore, to say that I deplore the rapid, violent and extreme fluctuations which have occurred in recent years in the price of rubber. I believe it to be detrimental to the interests of the individual manufacturer, the industry, the trade and the public. I shall welcome any change that will place the basis of our industry upon a more decent, stable and legitimate basis.

If listing on an exchange has for its purpose the correction of excessive speculation and is in the interest of legitimate business, I would be most happy to have it done, but if, on the other hand, its hidden purpose is to facilitate speculation, I hope it will not be done.

I realize that in this communication I have not given you a direct answer to a direct question, but to do so intelligently would entail a study of conditions which I have neither the time, experience nor qualifications to undertake.

Unless these fluctuations in the price of rubber are controlled within reasonable limits the time will come when the old-

fashioned methods of economy, efficiency and control may be subordinated to "taking the gambler's chance."

I am glad that the INDIA RUBBER WORLD is interesting itself in a matter so vital to the welfare of our industry, as I am convinced that we shall continue to be the victims of speculative endeavor until such time as an international association of manufacturers is formed to minimize this evil.

Very truly yours,

ALEXANDER M. PAUL.

President, Davidson Rubber Co., Boston, Mass.

NO BENEFIT TO THE MANUFACTURER.

I do not know that I can offer any suggestions which would be of any benefit in regard to selling crude rubber on the New York Produce Exchange. I think there would be a tendency to further speculations in crude rubber and it would be of no benefit to the manufacturer; on the other hand, the manufacturer would like the speculative feature in crude rubber eliminated as far as possible.

Therefore, in summing it up, my opinion is it would not be a good thing for the manufacturer.

THE FIRESTONE TIRE & RUBBER CO.,

H. S. FIRESTONE, President.

LEAD TO HIGHER PRICES.

At the present time I do not see any benefit to the manufacturers by having crude rubber listed on the New York Produce Exchange, as I think it might lead to higher prices through speculation.

FROM AN IMPORTANT CANADIAN MANUFACTURER

LEAD TO WILD SPECULATION.

I have to acknowledge receipt of your favor and, in reply, in my opinion, the listing of crude rubber at the New York Produce Exchange would not in any way help rubber manufacturers but would be detrimental to their interests and would no doubt open up wild speculation similar to that which has been carried on in England.

The market for crude rubber is so narrow that it would be possible for a few concerns to combine together and control it with success. However, should plantation rubber increase in volume, as we expect it to do, conditions might change considerably, but with all the *pros.* and *cons.* I think it would be rather a serious injury than a gain to the rubber trade.

AN AMERICAN MANUFACTURER IN ENGLAND.

REFER IT TO RUBBER CLUB.

I am very much interested in the proposal to list crude rubber in New York. It occurs to me that the Rubber Club of America might interest itself in the matter and decide upon its wisdom. It has a membership that is widely distributed and has already done so much to unify the trade that perhaps it can do more.

A NEW HOME FOR THE UNITED STATES RUBBER COMPANY.

AUTOMOBILEDOM, in New York, will shortly be graced by a remarkably handsome building which the United States Rubber Company will erect, for the accommodation of its various departments, on the south-east corner of Broadway and 58th street, on a plot 108 x 126 feet.

As the accompanying illustration, reproduced from the architects' front elevation, shows, it will be not only a lofty but an imposing edifice, the fronts being in somewhat freely treated Renaissance style, the idea being to divide each front into upper and lower parts, on account of the great height, and to make the lower portion as most directly under observation, from below, the most ornate. A cornice, of massive proportions, crowns the

twenty-story structure; both fronts will be of white Vermont marble. The entire interior will be of fireproof material and each floor, of 6,300 square feet area, can be subdivided into seventeen offices, varying from 280 to 630 square feet in area. The mechanical equipment, including freight and passenger elevators, vacuum cleaner, heating, ventilation, fire protection, etc., is to be of the



UNITED STATES RUBBER COMPANY'S NEW BUILDING.

most improved modern character. To add to the stability of the structure and enhance the utility of the below-ground space, the foundations will be carried to bedrock and the basement and sub-basement fully waterproofed.

The roomy, well-lighted store, on the ground floor, will be occupied, when the building is complete, by the United States Tire Company and they will also use a portion of the basement and sub-basement, for storage purposes. The greater portion of the upper part of the building will be occupied, as offices, by the United States Rubber Company. Carrere & Hastings, New York, were the architects of the building.

New Rubber Goods in the Market.

ARTISTIC RUBBER SUNDRIES.

A STEADY advance in the production of truly artistic rubber goods, both in shape and in color, has marked the last few years.

The illustrations from the latest catalogue of the Tyer Rubber



"BABY'S CONTENT,"
NIPPLE AND RING.



COVERED WATER
BOTTLE.



FANCY WATER BOTTLE,
WHITE, SLATE TRIMMINGS.

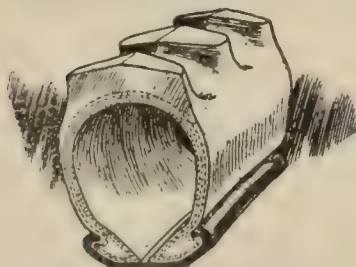


MOTTEL BULB SYRINGE.

Company, an exceedingly artistic publication of 150 pages, are excellent examples.

A NEW "STEPNEY" TIRE.

THE Stepney spare wheel, an English invention successfully marketed in the United States, is known to all motorists. It is interesting to know that the company who made a success of



STEPNEY "ROAD GRIP" TIRE.

the spare wheel have just brought out a new tire, which they call the "road-grip." It is spoken of as a non-skid device, which it may or may not be. It should, however, secure a very tenacious grip forward or backward. It ought also to keep any wheel from spinning, and locked wheels would not be likely to slide backwards when equipped with this tire. [Stepney Spare Motor Wheel Co., London.]

YACHTING AND POLAR BOOTS.

At first these specialities will appear a trifle cumbersome to the American yachtsman, whose fancy runs more towards trim rubber soled duck-topped goods in white. For the English Channel and the North Sea, and indeed very often for the Ameri-



YACHTING BOOT.

POLAR RUBBER.



HALF POLAR RUBBER.

can Atlantic waters, the boot would, however, be exceedingly comfortable. This, together with the heavy polar and half-polar overshoes are the produce of the same makers. [North British Rubber Co., Edinburgh, Scotland.]

THE FISK "CLINCHER" FOR BICYCLES.

The general feeling has been that America was wedded to the single tube bicycle tire. Such a belief, however, disappears when a company that has been in the bicycle tire business from



THE FISK CLINCHER BICYCLE TIRE.

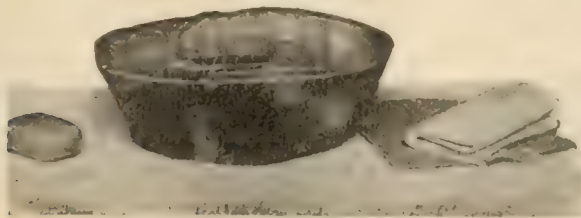
its beginning suddenly puts on the market a high grade and attractive clincher tire. It is said that the manufacturers of wheels are taking to it kindly and it will find a ready market. [The Fisk Rubber Company, Chicopee Falls, Massachusetts.]

A RUBBER CIGAR HOLDER.

A cigar holder of soft red rubber looking like a truncated nursery bottle nipple has appeared upon the market. At first it does not appeal to one, but a second look suggests points in its favor. For example, so many men were once bottle babies that their earliest and pleasantest associations cluster around a bit of rubber almost identical in shape with the cigar holder. It may happen, therefore, that the seasoned smoker may derive added comfort by sucking smoke through the rubber teat and live over again the days that are gone.

RUBBER BASIN FOR MOTORISTS.

The motorists wash-up outfit, in a neat, compact, leather case, consists of a folding rubber wash basin, Turkish towel, wash

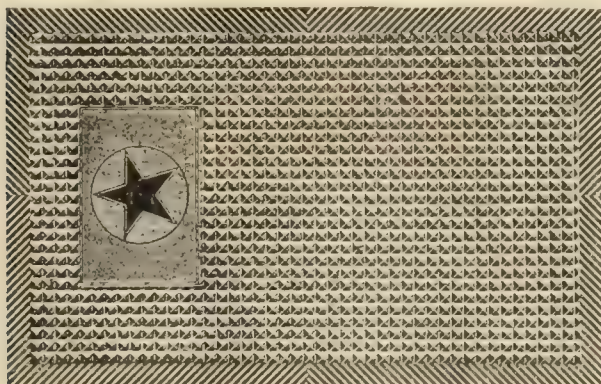


MOTORIST'S "WASH-UP" OUTFIT.

rag in a rubber cloth pocket and a soap box. [C. F. Rumm & Sons, Philadelphia, Pennsylvania.]

THE VICTOR CARRIAGE MAT.

Very artistic designs in rubber mats, matting and treads for both the carriage and automobile trade have been designed dur-



VICTOR CARRIAGE MAT.

ing the last few years. A good example is the "Victor," shown in the accompanying illustration. [Victor Rubber Co., Springfield, Ohio.]

PAINTING RACK FOR GOLF BALLS.

This is a small steel frame that pivots and holds 6, 12 or 36 balls. The first two are for the ordinary player, while the last

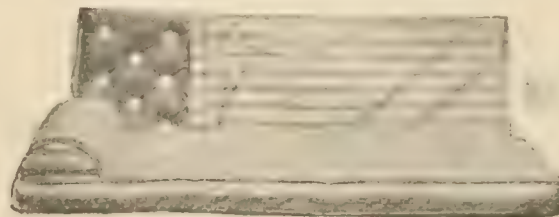


GOLF BALL PAINTING RACK.

is intended for professionals. By its use a great deal of annoyance is saved as the device is simple, clean and thoroughly practical. [The Golfers Supply Co., 124 W. 56th street, New York.]

PNEUMATIC MATTRESSES.

The air mattress is not new, but is exactly as popular as ever it was. The Perfection herewith illustrated has been mentioned before in THE INDIA RUBBER WORLD. The particular reason for its recurrence at this juncture is due to the fact that the com-

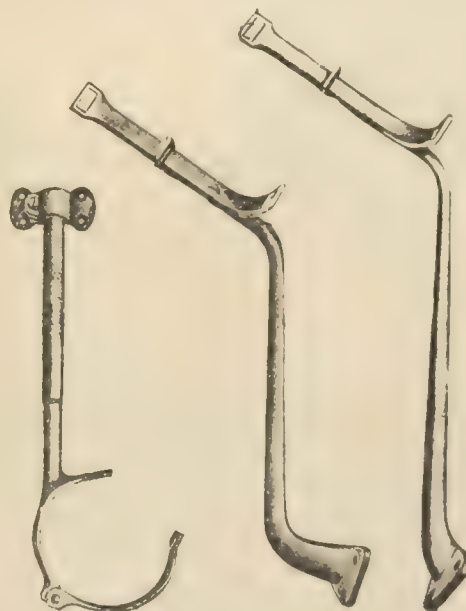


PERFECTION AIR MATTRESS.

pany are supplying with one of their air mattress what is known as "The Gem" sleeping bag. Today, when all who can afford to do so are getting out in the open during the day, and occupying sleeping porches at night, the combination of air mattress and sleeping bag is bound to hit the popular fancy. [The Pneumatic Manufacturing Company, 526 Seventeenth street, Brooklyn, New York.]

HARD RUBBER TIRE HOLDERS.

With the advent of the fore door arose the demand for a new type of tire holder much simpler and more ornamental. This is



HARD RUBBER TIRE HOLDERS.

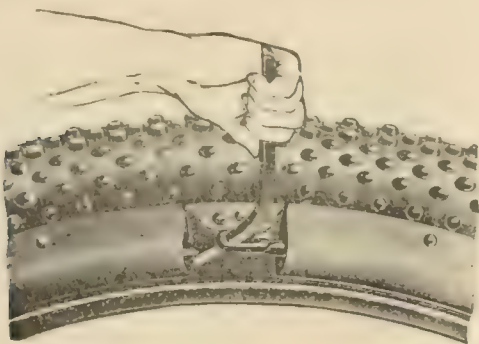
met particularly by the holders finished in polished black hard rubber, as are those we illustrate. [Le Compte Manufacturing Co., 44 Elm street, Newark, New Jersey.]

RUBBER BANDS INSTEAD OF HAT PINS.

Commenting on a recent proclamation, made by the police of Vienna and other European cities, against the wearing of hat pins, the unprotected points of which project beyond the brims of the hats they are used to secure, and which are denounced as a menace to public safety when worn in public conveyances or crowded resorts, a contemporary suggests a return to the elastic bands, with which the wearers of "millinery" were wont to secure them in bygone years. Our contemporary intimates that the best of the "protectors" proposed for the dangerous points, are unsatisfactory, whereas, the elastic band, of a color to match the hair, would be inconspicuous and sufficiently secure. And what a boom in hat elastics the rubber industry would enjoy.

A NEW WOODWORTH TREAD.

THEY call it the "Center Studded." It is made of somewhat lighter leather than in the past and is steel studded only on the center portion. It is designed for city use or on smooth



CENTER STUDDED TIRE TREAD.

roads. It is especially adapted for trucks, taxicabs and vehicles of that type. The illustration shows the quick fastening device. [Leather Tire Goods Co., New York, New York.]

RUBBER GOODS FOR INFANTS.

These cover a long line of exceedingly neat productions made of rubber sheeting and impervious to water, acids or alkalis.



BABY PANTS.



TABLE APRON



TRAP BIB.



COVERALL BIB.

They embrace many styles of baby pants, table-aprons, bibs, etc. [The I. B. Kleinert Rubber Co., New York.]

THE RIDGE OKONITE.

Very few automobilists know much about the type of insulation used in wiring their machines. There is no reason, however, why they should not be able to recognize the products of the best manufacturers. The Okonite Co., that such recognition



OKONITE INSULATION.

may be easy have a tiny ridge projecting from the surface of their insulation. An excellent idea; something easily remembered and recognized at a glance. [The Okonite Co., 253 Broadway, New York.]

FOR CLEANING RUBBER TIRES.

THE very effective little scratch brush here shown is for cleaning rubber tires before vulcanization, that is to say it is actually for cleaning tires that are to be repaired and then patched and



RUBBER TIRE CLEANER

vulcanized. It is either belt or motor driven and a tremendous time saver. In fact this little machine is just in the line of modern efficiency. [The Stow Manufacturing Company, Binghanton, New York.]

HARD RUBBER CONNECTORS.

The story of connectors in connection with the automobile is not a long one. About all one can say is that a high grade of hard rubber is better than any other material and that the

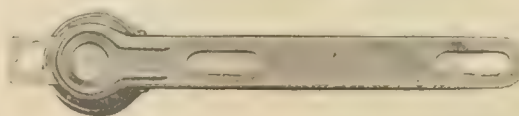


HANDY CONNECTOR.

"Handy" Ediswan is of the best type; that it never jars loose. [The Chicago Electric Manufacturing Company, Chicago, Illinois.]

RUBBER MAKES IT SAFE.

The fire-cracker has much against it: The "Sane Fourth" people will probably never give over their war against it. They can hardly object, on the score of danger, to the new "Safety



"THE SAFETY CRACKER."

Cracker" here illustrated. It is in brief, a steel magazine handle

to which is attached a strong rubber ball, having an open, circular aperture on its upper side. A strip of paper that leads through the handle, closely covers the hole and on the lower surface of the ball being struck sharply against an unyielding surface, the resultant compression of the air within the ball, bursts the paper over the hole with a sharp report. By moving the paper forward, so as to present an unbroken surface, the operation may be repeated *ad lib.*, strips of ordinary newspaper, cut to right width, furnishing ammunition should the strips furnished by the manufacturers be exhausted. [A. C. Barler Mfg. Co., 58 W. Lake St., Chicago, Ill.]

A NEW rubber sole for sporting shoes has appeared on the English market. In appearance it is radically different from the ordinary black, grey or red rubber product. At first glance it appears to be a very close, thick felt, but it is said to be made of rubber and asbestos. It wears exceedingly well, has practically no odor and does not draw the feet, for the last named reason it makes an excellent deck shoe.

THE RUBBER TRADE AT AKRON.

BY A REGULAR CORRESPONDENT.

THE B. F. Goodrich Company is publishing the campaign to educate tire users to a more perfect understanding of the causes of tire trouble. It commences with a series of folders illustrating the more common mistakes in the treatment of tires. A careful study of these folders will save many repairs bills, and merit the heartiest thanks of the tire user.

Folder No. 1 illustrates cuts on the tire tread evidently made by a chain which was fastened to the spokes of the wheel. This was thus held tightly in one place as the cutting appears at regular intervals, illustrating the point that the least injury results from chains being loosely applied so that play is allowed to work themselves around the tire, distributing the strain to all points alike.

Folder No. 2 shows a tire forced out of shape, caused by the wheels being out of alignment. This usually occurs on the front wheels, and generally affects both tires alike. Improper adjustments of the steering apparatus or a bent axle or knuckle are responsible.

Folder No. 3 represents a flat, out-of-shape appearance, caused by not properly inflating the tire. This produces loosening of the tread from the fabric; also rim cutting.

Folder No. 4 represents a tire blistered by the neglect of small cuts extending to the fabric.

Folder No. 5 represents a large break in the fabric, caused by the wheel passing over stones, but leaving not the slightest mark on the outside of the case.

Folder No. 6 represents a tire that is "rut-worn." This does not necessarily imply that this condition is due only to ruts, but it is frequently caused by running in deep wheel tracks. The same condition results if the tire is run on muddy roads on a frozen crust insufficiently strong to support the car; also running against curbstones.

Folder No. 7 represents a small cut in the tread. An inside patch was applied by the owner to place the tire in good running order, but instead, the patch acts as a wedge, causing the fabric to part, thus causing a break from bead to bead.

* * *

The Goodyear Tire & Rubber Company is preparing a storage lake in East Akron as a source of water supply for their factory. It is fed by the Little Cuyahoga River, which drains Springfield and Fritch's Lakes, and a watershed of 100 square miles. The lake will cover more than eighteen acres. This provision on the part of this company will take care of the future growth of the plant which is being greatly enlarged.

Work will shortly be commenced on a new building for the Goodyear Tire and Rubber Co., Akron, Ohio. It will be 300 feet in length, an addition to the tire manufacturing department. That this considerable addition to the company's facilities is urgently needed is proved by the fact that although working 24 hours a day and turning out daily 2,200 tires, or enough to equip 550 automobiles, the company is weeks behind with its orders. Last year the sales of Goodyear tires suddenly mounted to \$8,500,000, having trebled in a single year; this year they are expected to reach \$12,000,000.

* * *

Each of the big rubber companies in Akron is a consumer of a large amount of water, using almost as much as many cities of 20,000 or 30,000 population. The Akron Water Works Company recently had a break in its pipes, which made it necessary to shut down the whole plant for repairs. The question arose, What would the city do for a supply? and this created a great deal of apprehension among the citizens of Akron. Mr. H. S. Firestone, president of The Firestone Tire & Rubber Company, immediately upon securing this knowledge, placed at the disposal of the citizens the private pipe line of his company, through

which water is brought from a lake some distance away for the purpose of operating the large turbine engines lately installed in the new Firestone plant in South Akron. Thus, in addition to carrying the load necessary for The Firestone Tire & Rubber Company, the emergency pumps of this plant, night and day, supplied Akron with fire protection and drinking water. This was done unsolicited and at the expense of The Firestone Tire & Rubber Company, and more, Mr. Firestone says that they (the City of Akron) can use it as long as they need it.

* * *

James A. Braden, advertising manager of The Diamond Rubber Company, and a careful student of economics as well as a keen analytic and constructive advertiser, says on the subject of scientific management, especially as it affects The Diamond Rubber Company: "There are two ways of looking at scientific management, one, by which the factory derives results, and that by which the employees benefit. Why is it that some factories are able to turn out much better goods than their competitors? Take, for instance, the rubber shops. All can buy rubber for the same price and cotton, for the fabric, costs one as much as the other. What makes the difference in the finished product? Scientific management. Manufacturers all over the country have been paying special attention to this for the past few years. As far as my limited experience has shown, brains count for much in the Diamond. Nearly all the men who are now holding high positions in this company rose from the ranks, beginning as office boy or working at minor positions in the factory proper. This shows that an eye is kept on the work of the men in the factory, and they are advanced as rapidly as is permitted. Ten years ago, no one would have thought of making alterations in the building to provide for the health or comfort of the employees. It is one of the greatest points, from an architect's view today, to make provision for plenty of light, and good ventilation. All of the Diamond buildings are built from a sanitary standpoint, the company having discovered that with plenty of light and pure air, a man can work better than when he is shut off from the light and compelled to inhale close and heavy air all day long.

"Another feature which has been added under the scientific management system is the hospital. When I came to the factory it was the custom, if an employe got a hand or leg cut off to send for the ambulance and, after a half-hour's wait, to take him to the hospital. Now, every time a finger is smashed or an employe feels in the least bit sick, he is taken to the hospital and put under a doctor's care. There is one trained nurse at the hospital all the time, two part of the time, and two doctors always within reach.

"It may be that officials of The Diamond Company are too lax with their employes, as they are allowed to talk while working, and are given much more freedom than men in most other factories; but we find that by giving them a little freedom they work a little harder when they do work and get out as much as if they were compelled to stay on the job all the time.

"I don't know whether it would be called scientific management or not, but by watching for the comforts and needs of all our employes and trying to work with them as individuals instead of a body of 5,000 laborers, we are making the Diamond grow every day, and by treating our employes in a broad way, overlooking their petty faults, as are benefiting themselves and us.

"More technical ideas of 'scientific management' are being applied at the Diamond, too, such as arranging seats at work benches so not a move of the worker is lost. In one room the saving to the company last year was \$10,000. Employees who come up to the standard set get a bonus in wages."

* * *

Francis E. Holton, cheerful, energetic, active, eighty, the youngest old man in the rubber sundry and specialty business, the possessor of the one-millionth patent says: "There is no

news about rubber that I am not interested in. Ever since I started in the rubber industry with my wife as a partner, I have lived on the study of it." He attributes the wonderful growth of the rubber industry of late years largely to the advent of the gasoline engine, this making possible the automobile, and the automobile in turn calling for rubber tires.

Mr. Holton, no doubt, is the oldest rubber student of The American Rubber University. Although an octogenarian, his step is steady, his eye penetrating, his mind clear, analytical, logical and constructive, his chief aims being the advancement of the science for which he has given almost a lifetime of effort.

* * *

A welcome indication of prosperity at Akron and in Summit County generally is afforded by the fact that more than three weeks elapsed without any petition in bankruptcy from either quarter being filed with the Akron official referee.

LARGE EXTENSION OF REPUBLIC PLANT.

At a recent meeting of the Board various important additions to the works of the Republic Rubber Company, Youngstown, Ohio, were decided upon. These include enlargement of the power plant and mill-room capacity. In connection with the two new buildings just completed the improvements will allow of a largely augmented product, while the working staff will be increased from 1,000 to 1,500 hands.

A PRIZE-WINNING STABLE.

Among the most admired equines at the recent Chagrin Valley Hunt Club Show were three "blue ribbon" stars—Dunfermiller, Wild Irish Rose and Lochinvar—from the stable of W. B. Miller, secretary of the Diamond Rubber Company, Akron. The first-named entry took the prize on that occasion in the heavyweight hunter class.

THE CREATION OF THE FIRESTONE COMPANY.

HARVEY S. FIRESTONE, president and general manager of The Firestone Tire & Rubber Company, is a capable president, an efficient manager and a constructive engineer of marked ability. He was born in Columbiana County, Ohio, December 20, 1878, of sturdy pioneer stock who had lived in this country more than a century and had taken not only an active part in political and commercial lines, but had helped shoulder the burdens of the moral and military conflicts of this nation commencing with the French and Indian wars.

Endowed with physical strength and stamina, given the advantage of the schools of his home, and supplemented with a first-class commercial education, in 1888 he started as a book-keeper in a coal office. After mastering the details of this business, and desiring to broaden his business education, he became a traveling salesman for a drug and grocery specialty house. In 1894 he entered the employ of The Columbus Buggy Company. He soon became convinced that there was a broad field for development in rubber tires for various vehicles. Acting on this conviction he resolved to devote his entire efforts to the development of this industry.

He at once commenced to exploit rubber tires for buggies, and in 1894 drove the first rubber tired buggy in Michigan. The next two years he spent in Detroit demonstrating to various owners of iron tired vehicles the advantage of using rubber tires. In 1896, realizing that there was more business in Chicago than in Detroit, he went there and with a capital of less than one thousand dollars organized The Firestone Rubber Tire Company.

The first few years Mr. Firestone gave almost his entire time to the sales end of the business, having his tires manufactured by contract. Then he and his associates, having bought out The Imperial Rubber Tire Company of Chicago, consolidated with The Rubber Tire Wheel Company, of Springfield, Ohio. This consolidation was supposed to control the rubber tire business at that time. Mr. Firestone and his associates sold their rights

to New York parties, who later formed The Consolidated Rubber Tire Company of New York. He remained in Chicago as general manager of that company until August, 1899, when he came to Akron, Ohio.

In August, 1900 he organized the present Firestone Tire & Rubber Company, which was incorporated for \$50,000 for the purpose of making carriage tires of the side wire type, of which Mr. Firestone owned the original patents. In 1903 The Firestone Tire & Rubber Company bought an old foundry in East



HARVEY S. FIRESTONE.
President Firestone Tire & Rubber Company.

Miller avenue, and commenced to manufacture their own tires. The number of tires manufactured increased until the summer of 1910 the $3\frac{1}{2}$ acres of floor space was completely outgrown; the company had no room to increase their output, as the plant was running day and night. The company immediately commenced to construct a new plant of latest design, construction, machinery and equipment covering a floor space of over ten acres, which was completed in May of this year.

RIGHT TO THE POINT.

We are requested to publish the following, a communication addressed to the members of the Rubber Section of the American Chemical Society:

"The American Chemical Society is very anxious that those of its members interested in the chemistry of India rubber should have their problems considered and solved. The India Rubber Section has had two meetings, but there is not yet sufficient evidence of real co-operative effort among the rubber chemists to insure success. The methods of analysis of India rubber are in almost a chaotic condition. The usual specifications for rubber goods meet the approval only of those who make them. The general chemistry of India rubber is sadly in need of improvement.

"Only the chemists actively interested in the India rubber industry can hope to improve affairs, and it is, accordingly, necessary that they should really get together without too many padlocks on their lips if results are to be accomplished. It is certainly true that there are many secrets of the rubber trade which cannot be disclosed, nor is there any desire that they should be disclosed, but when certain firms decline even to allow their methods of analysis to be known, it would certainly seem that secrecy is carried too far. The Section can never become a success if every member goes to its meetings with no idea of his responsibilities toward helpfulness, but simply to learn from others, many of whom may be in a similar position."

THE RUBBER TRADE IN SAN FRANCISCO.

THE rubber business in and about San Francisco is not very lively, but there is a fair degree of activity, and it appears that there is more business from this territory than through the northern districts in the neighborhood of Seattle, Washington, and Portland, Oregon. Business in the northern sections has been hampered, owing to the fact that the mills are not running very extensively. Taking California as a whole, the yield of all products, both of the farms and of the mines, is very large this season, and prices are good, so that a season of prosperity is unquestionably at hand. Then, too, the World's Fair proposition lends more life to the local trade and everything is favorable to a prosperous year.

The lack of demand just now, however, keeps the market quiet, and prices in many things are held at a figure too low in comparison with other commodities. A representative from an eastern house was surprised at the low prices which are being asked here for belting. He said that his house is getting a better price wholesale in export centers like British Columbia, India and other far-away places, than the retailers in San Francisco are getting for the same class of goods.

* * *

Ethelbert Milburn has come out from New York to take the management of the new Pacific Coast branch of the Seamless Rubber Company of New York. This line was formerly carried as an agency by the local rubber house of The Squires & Byrne Company. The Seamless company, finding that all of the other manufacturers were establishing direct branches on the Pacific Coast, and their business here continually growing, concluded to do likewise. The offices and salesrooms will be maintained in the same location at 565-567 Mission street.

* * *

An action has been commenced against the directors of the defunct Barton Packing & Rubber Company, by the firm's creditors, among whom S. S. Jones & Company, on California street, dealers in crude rubber, are the most deeply involved. W. B. Dunning and four of the Bartons are made defendants as directors, and all are charged with a liability of \$12,250. The Barton Packing & Rubber Company failed last May and the assets of the firm were then assigned for the benefit of the creditors. The complaint alleges that the sum of \$12,215 was held out wrongfully, at the time of the settlement. The Jones Company alleges that there was \$17,086 due to them for goods purchased, and that all they received in the settlement was \$8,651.

* * *

Mr. Hirsch, representing the Pennsylvania Rubber Company, has returned from his northern trip. During part of the trip he was on the sick list and spent two weeks in a hospital in Spokane.

* * *

R. H. Pease, president of the Goodyear Rubber Company, has returned from Portland, Oregon, where he took his family by automobile a distance of 750 miles. He became much interested in the matter of public roads, and states that with a little attention, they can be made very comfortable and beautiful. California has appropriated \$18,000,000 for the purpose of building state roads, and within the next few years we expect to have more and better automobile roads than perhaps any other state in the union. Mr. Pease states that business generally is dull in comparison to what is expected at this time of year, although in San Francisco it is running ahead of last year. But in Portland, and also Seattle, on account of the mills being shut down, business is quiet. In regard to the boot and shoe business, everybody is waiting. As there is no discount of 5 per cent this year as a premium to purchase made prior to July 1, there was very little advance ordering.

Mr. Cook, one of the managers of the B. F. Goodrich Company, states that business is improving every day. He says that indications are very favorable for a big garden hose business for the coming year. The dealers are buying earlier than ever.

* * *

Mr. Kerr, representing the Shultz Belting Company, of St. Louis, is in San Francisco on business in connection with the firm.

* * *

Business with The Squires & Byrne Company is increasing and they have found it necessary to increase their space by adding a mezzanine floor to the main floor at their store on Mission street. Mr. Squires has gone down to Los Angeles to take charge of the firm's branch there, as Mr. Cooley, their agent, is no longer with them. The Los Angeles branch is doing well and the firm intends to look after it carefully. Mr. Squires will remain there for a while and then he will alternate with Mr. Byrne, who will take charge for a few months, and so on, alternating back and forth.

* * *

George Dodge, of the Western Belting & Hose Company, on Mission street, will go to New York about the first of the year to manage the Mineralized Rubber Company's business in that city. Nathan Dodge, who has been managing the New York business, will come to the coast to spend the winter. He will arrive some time in October. Business with the local firm is reported as being very good.

* * *

S. E. Abramson has been selected to take the management of the Los Angeles branch of the Gorham-Revere Rubber Company, at 1237 South Olive street. Mr. Wiese has charge of the automobile tire end of the business at that point.

* * *

Robert McNeilly has just returned to headquarters with B. F. Goodrich Company, from his honeymoon trip to the eastern trade centers. Harry Miller, one of the managers, has also returned from the east.

* * *

For the sake of uniformity throughout the coast, the names of the Washington Rubber Company has been changed, both at Spokane and Tacoma, Washington, so that those branches now are each called the Gorham-Revere Rubber Company.

* * *

Mr. Joseph V. Selby, representing the Boston Woven Hose & Rubber Company, reports that the fall trade conditions are looking very favorable.

* * *

The Golden Gate Tire Company has leased the new building, which is being constructed for it on the corner of Van Ness and Elm avenues.

* * *

The Keaton Vulcanizing Works has incorporated with a capital stock of \$50,000. R. D. Sweeney, R. H. and George Keaton are the directors. They manufacture especially the Keaton non-skid tread.

* * *

Sakutaro Nakano has filed suit against the Bowers Rubber Works for \$10,000. He was struck by a truck last March, which was owned by the Bowers Rubber Works. He alleges that five of his ribs were broken.

Every twenty-four hours the United States Tire Company's Hartford (Connecticut) plant turns out complete over 1,000 automobile tires, 1,000 inner tubes, 2,000 bicycle tires and 100 solid motor truck tires. The output of the four other branches—the Morgan & Wright, G & J Tire Co., and the two Continental Caoutchouc factories—is fully as great.

THE RUBBER INDUSTRY IN RHODE ISLAND.

(Special Correspondence)

DURING the month of August the rubber industry in Rhode Island has improved somewhat over that of July, some of the larger plants which closed in the middle of July having opened again, either wholly or in some departments, while some of the independent manufacturers have sufficient orders on hand to warrant them in running on full time schedules. Dullness in the trade was felt chiefly at the Woonsocket and Bristol plants of the United States Rubber Company, but these have now reopened and that no further curtailment is contemplated.

* * *

The United States Tire Company, which has just completed large additions, doubling the size of its plant on Valley street and the banks of the Woonasquacket river, is one of Providence's fastest growing manufacturing concerns. The company, a branch of the United States Rubber Company, came here about a

The two factories of the Woonsocket Rubber Company at Woonsocket, the Alice and Millville Mills, are now running on a full time again, following a shutdown of one month, begun on July 15. Altogether 2,300 people are employed, 1,500 at the first named mill and 800 at the second.

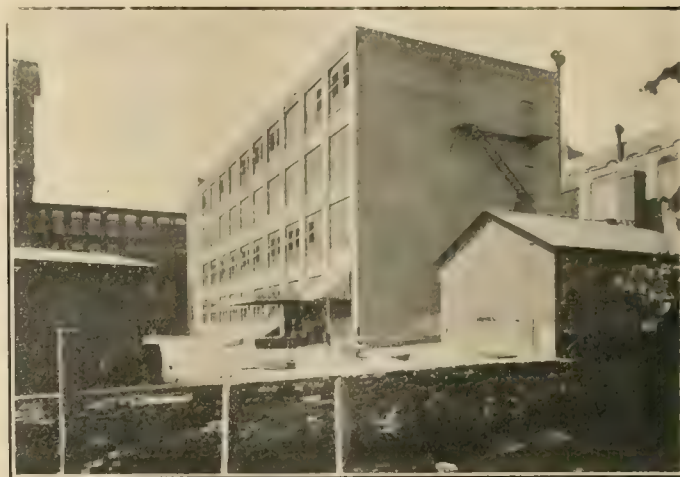
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President Charles D. Davol, of the Davol Rubber Company, of Providence, stated recently that business conditions with the firm are excellent at the present time, the 750 hands being employed on a full time schedule days. An addition to the plant is in process of erection, being two stories in height and designed to further increase the vulcanizing department. When completed four new vulcanizers are to be installed, two for hard and two for soft rubber.

The general appearance of the plant of the Davol Rubber Company has been changed somewhat recently owing to the widening of Eddy street by the city. A long row of tenement houses, between Point and South streets have been torn down,



NEW MACHINE AND CARPENTER SHOP OF UNITED STATES TIRE CO. PROVIDENCE, R. I.



NEW STOREHOUSE FOR UNITED STATES TIRE CO. AT PROVIDENCE, R. I.

year ago, and purchasing the old plant of the Joseph Banigan Rubber Company, has added new structures until now it has 12 buildings altogether, and furthermore has plenty of land nearby upon which it can expand as the business grows.

Among the more notable changes just finished at the local plant are a four-story brick storehouse, 260 x 60 feet, used to store finished product and raw material, and a two-story machine and carpentry shop, 125 x 60 feet, with an ell of one story. Besides these a three-story addition has been erected to one of the mills and a new power house, a press room, a moulding room and a one-story addition to the main mill have been built in the past few months, being now complete and in use. All the new buildings, like the old, are of heavy brick construction.

The principal product of the concern is automobile tires, and while at present 500 of these are being turned out every day, it is planned to largely increase the output shortly. 600 hands are employed and the factory is being operated day and night.

The company requires a higher class of skilled help than is necessary in some other branches of rubber manufacture, and has experienced some difficulty in obtaining the kind of help it seeks. But those now employed by the company seem to be satisfactory workmen, having been secured from this section, and more hands are being put to work every day, as rapidly as they can be found. It is the company's plan to divide the help into two shifts each of which will contain both experienced and less experienced workmen. One of these divisions works nights and the other days, and each will be filled in as rapidly as possible in order that the entire capacity of the plant may be utilized.

and this not only gives a clear view of the large factories from the street, but affords room for the company to erect an addition to its property. This addition, Mr. Davol states, is contemplated, but probably will not be made this year.

* * *

Former Governor Augustus O. Bourn, of the Bourn Rubber Company, this city, states that business is booming with this concern and that all departments are running on full time, giving employment to between 400 and 500 people. It is not the practice of this company to shut down at all during the year for vacations or repairs, such repairs as have to be made being done while the plant is in operation or over night. Governor Bourn, after many years in public and private life, is still in good health and in his office daily.

* * *

A. T. Baldwin, of the Walpole Rubber Company, of Walpole, Massachusetts, said recently that the plans of this company for building a branch in Providence have not yet been completed and that it has not been decided what sort of goods the company will manufacture here, if it builds upon land recently acquired on Harris avenue.

* * *

Harry H. Shepard, formerly representative of the National India Rubber Company, has invented and is just placing on the market the Shepard Air Cushion Typewriter Key Cap, which, as he says, "Means less muscle fag for the operator." The cap is a very simple affair, made of fine quality rubber, moulded in one piece, containing no metal parts, equipped with a pneumatic cushion and an inlaid letter.

The United States patent on Mr. Shepard's invention was secured in September, 1910, and the Canadian patent in March, 1911, and, as far as he knows, there is only one other similar key on the market. He is manufacturing them in Providence, where he is also doing a commission rubber business.

* * *

The shutdown of the whole factory of the National India Rubber Company at Bristol, which threw some 1,600 hands out of work, did not continue as long as was generally expected. The entire plant was closed for two weeks, beginning on July 15; on July 31 three departments—wire insulating, mechanical fabric and druggists' sundries—were opened, giving employment to about 400. It is now announced that the departments at present idle will start up at once. By that time it is expected that the entire 1,600 or more hands will then be at work again.

* * *

The International Rubber Company, at West Barrington, is extending its equipment in various ways, and its shops are now said to be fully fitted for the curing of manufactured goods, principally sheeting. Superintendent Newell is having orders filled rapidly. A new departure is the printing of cotton cloth, a machine for this purpose having recently been installed. It is stated that should the scheme prove to be successful, other machines may be installed later.

* * *

Charles O. F. Thompson, who until recently was employed by the National India Rubber Company at Bristol, has removed his family from that town to Trenton, New Jersey, where he is now employed by the Thermoid Rubber Company of that city.

* * *

Health Officer Thomas E. Robbins, of Barrington, is investigating the conditions surrounding the disposal of sewage at the plant of the International Rubber Company. Similar investigations are being made with regard to other concerns in that town. A modern filtration plant which will care for the sewage of the several concerns has been suggested.

* * *

The Consumers' Rubber Company, at Bristol, is now transferring its raw material and manufactured product between its plant and the railroad station by means of large motor trucks. In this manner it is possible to accomplish the work in one half the time required by horses. Large shipments of footwear are now being made from their factory. It is stated, however, that the wire insulation business of this concern is not as brisk as it was at the first of the year.

* * *

E. S. Huxley, for the past ten months assistant general manager and sales agent of the National India Rubber Company, resigned that position recently to accept one of a similar nature in New York City.

* * *

Miss Caroline Hanger, head of the pay office of the National India Rubber Company, has resigned her position. She has been employed by the company for the past 18 years.

* * *

Rubber companies doing business in this State, whether incorporated under the laws of Rhode Island or not, will have to pay a tax to the State if the recently drafted tax bill becomes law. This measure provides, among other things, for a State tax on the excess valuation of corporate property, applicable to all corporations generally, at the rate of 30 cents on each \$100. Rhode Island's net revenue will be increased by more than \$600,000 if this bill is passed at a special session of the Legislature which may be called by the Governor within a short time.

RUBBER IN THE 1912 CONGRESS OF APPLIED CHEMISTRY.

IN accordance with the resolution adopted in London at the 1909 International Congress of Applied Chemistry the 1912 Congress will take place in the United States. The opening meeting will be held at Washington on September 4, next year, while the other meetings, both business and scientific, will take place in New York, beginning September 6 and ending September 13, 1912. The honorary president will be Dr. Ernest W. Morley, of West Hartford, Connecticut; the acting president being Dr. William H. Nichols, of New York. There will be 24 sections and sub-sections.

"India Rubber and other Plastics" four sections, the following comprising the Executive Committee and Sectional Committee:

EXECUTIVE COMMITTEE.

President—L. H. BAEKELAND, Sc. D., Yonkers, New York.
Vice-President—C. C. GOODRICH, 25 Broad street, New York.
Secretary—JASPER E. CUANE, M. S., The Arlington Company, Arlington, New Jersey.
HAROLD VAN DER LINDE, Ph. D., 111 Broadway, New York.
D. SPENCE, Ph. D., The Diamond Rubber Company, Akron, Ohio.
Business address of Section Vb.: Yonkers, New York.

SECTIONAL COMMITTEE OF SECTION Vb. INDIA RUBBER AND OTHER PLASTICS.

J. W. AINSWORTH, Thomas A. Edison, Inc., and Condensite Company, East Orange, New Jersey.
W. C. GEAR, Ph. D., B. F. Goodrich Company, Akron, Ohio.
BYRON B. GOLDSMITH, American Lead Pencil Company, Hoboken, New Jersey.
CLARENCE M. JOYCE, S. B., Arlington Company, Arlington, New Jersey.
GEORGE OENSLAGER, A. M., The Diamond Rubber Company, Akron, Ohio.
ROBERT C. SCHUEFFHAUS, Ph. D., 175 Pearl street, New York
FRANK VANDERPOOL, Ph. D., 175 Park avenue, Orange, New Jersey.
THEODORE WHITELSEY, Ph. D., Rubber Regenerating Company, Mishawaka, Indiana.
EDWARD C. WORDEN, M. A., Clark Thread Company, Newark, New Jersey.

And the Sectional Executive Committee.

TOPICS OF RUBBER SECTION.

The topics of Section Vb. will include:

1. The chemistry of the production and utilization of rubber gutta percha and substances having allied uses.
2. Plastic cellulose compounds, or compounds containing esters of cellulose; as for instance, its nitrates, acetates, etc.
3. Synthetic and resinous plastics.
4. Casein and gelatine plastics.
5. Linoleum, oil cloth, artificial leather, artificial silk and films for photographic and other purposes.

This triennial International Congress is one of the most notable and important technical gatherings of a periodical nature. It will be noticed that the scope of discussion in the india rubber section is sufficiently wide to cover the various chemical questions now occupying the attention of the industry. As the attendance of many leading European scientists is looked for the meetings of the India Rubber Section will practically be another "International Rubber Congress." It is therefore to be hoped that the various chemical questions so ably treated at the recent London Congress will be again brought forward and discussed with a view to their early solution. The opportunity could be still further utilized if arrangements were made for the chemical exhibits representing the processes of rubber cultivation and manufacture being shown here in connection with next year's Chemical Congress.

The "Akron" Dirigible Balloon.

FOR the first time in history, America has produced a dirigible balloon of the first class. From bow to stern the "Akron," in which Melvin Vaniman will essay to cross the Atlantic ocean some time in October, is a home product, and whether or not the expedition meets with success, the fact will remain that this country has produced what is in many ways the most complete ship of the air ever built.

With a total length of 268 feet, the "Akron" measures about 30 feet longer than the "America," which Walter Wellman built for his polar expedition and in which he later tried to fly across the Atlantic ocean. This latter craft, however, was "Ameri-

fice to keep it in shape. With the framework, engines, fuel tank and other equipment attached, the "Akron" has a net lifting power of 12,000 pounds. This means that it could carry eighty people, including the crew.

For very obvious reasons, Mr. Vaniman is not ready to start a trans-Atlantic passenger airship line just yet, and on its initial trip over the briny deep it will carry but six men. The rest of the weight will be taken up mostly by gasoline and provisions.

The heavy fabric, of which most of the big gas plant is made and on which the fate of the expedition and the life of every member of the crew will literally hang, was made at the plant



GAS-BAG OF THE SEIBERLING-VANIMAN BALLOON, "AKRON."

can" in name only, for it not only was assembled abroad, but practically all of its equipment was of European manufacture. But especially in the last three years has this country been "catching up" with Europe in affairs aeronautic, and both Mr. Vaniman and Mr. Frank A. Seiberling, who is financing the venture, have seen to it that this new dirigible is representative of the country in which it was built.

While not so large as some of the numerous Zeppelin ships, the huge gas bag now at Atlantic City has a lifting power greater than any ever before constructed, it being capable of sustaining 26,000 pounds in addition to its own weight. The reason of this is that airships of the Zeppelin type are built with a metal frame to keep them rigid, which necessarily adds weight, while the airship in question is so made that the internal pressure of the gas will suf-

of the Goodyear Tire & Rubber Company, in Akron, Ohio, on special machinery. It is composed of three layers of the finest cotton cloth and four layers of the purest Pará rubber and is .03 of an inch thick.

In the early days of ballooning it was supposed that nothing could surpass silk as a balloon material, but years of costly experimenting have proven that it is inferior to cotton. In the first place, cotton is the more fibrous and the rubber, in consequence, adheres closer to it, making a gas-tight fabric. Cotton also lasts longer than silk, the latter showing a proneness to crack and split.

After coating a single strip of the cotton cloth on both sides with a special rubber compound, the "Akron" fabric was built up by taking three such layers and cementing them together.

This was then given another coat of pure rubber and then vulcanized. The strips of the finished fabric were about a yard wide and more than 2,200 pieces were used in the construction of the bag.

The seams are all double, machine sewed, and test out a little better than 100 per cent. both as to strength and leakage. This means that the seam is even stronger than the rest of the envelope. They were made gas-tight by cementing a very thin strip of rubberized fabric on both sides.

As the entire weight of the car is attached to the envelope at the sides, the fabric on the upper half of the bag had to be especially strong. That on the under side, which only has to support the pressure of the gas, which is very slight, is made of two layers of cotton cloth and three layers of rubber.

Of course every detail of the construction of the envelope was watched most carefully and not a penny of labor or expense was spared to make it perfect. Nevertheless, it was built in less than half the time ever given to a similar work. The first designing was done May 1 and the construction began just a month later.



FRANK A. SEIBERLING.

Eight weeks later it was loaded in the train and shipped to Atlantic City—a record that will probably stand for many years. The reason this was possible was that the work was done in the fully-equipped Goodyear factory, where large, well-lighted workrooms and expert labor were available.

The envelope alone weighs 4,400 pounds, and it has a capacity of 375,000 cubic feet. It is of the approved cigar-shape, with the extreme diameter 45 feet a quarter of the way back from the bow. This method of tapering the bag toward the stern allows for a minimum amount of air-resistance. The outer coating is yellow, not as might be supposed to make it conspicuous, but to protect the inner rubber coats from the ultra-violet rays of sunlight. These rays have been found injurious to rubber, but in passing through a yellow medium their chemical composition is changed so that they become harmless.

As an inventor and a man of affairs, Mr. Frank A. Seiberling has long been interested in aeronautics and aviation, and when, after the failure of the Wellman expedition, Mr. Vaniman broached the subject of another such venture to him the engineer found a ready listener. Mr. Seiberling is president of The Chamber of Commerce, of Akron, president of The Goodyear Tire & Rubber Company, and has a number of traction and other business interests.

He is a son of John F. Seiberling, the first man to invent a reaper, which both cut the grain and garnered it ready for binding, and who shared with McCormick the honor of making the modern reaper possible. Having been closely associated with his father, Mr. Seiberling also took up the development of these machines and invented a "knotter," which tied the grain in bundles with a bow knot. With his parents he moved to Akron in the seventies and soon became interested in the rubber industry. Among other things, he invented a quick-detachable tire, and he is one of the prominent figures of the rubber world.

Melvin Vaniman is a native of Illinois and was at one time a stationary engineer in the town of Paris in that State, but for a score of years he has traveled over Europe and America in the interests of flying machines. In the early days when any man that talked seriously of such a device was scoffed at, he and Frank S. Lahm built a tri-plane in France, which did much to further the science of aviation. Almost ten years ago he became connected with the Wellman expedition and was chief engineer on all of the unfortunate voyages of the "America."



MELVIN VANIMAN.

Undaunted by his dip in the Atlantic last year, he no more than set foot on shore than he began to plan another ship, this one to be made wholly after his own ideas. The loss of the "America" served to prove that an equilibrator, dragging like a long tail over the waves, was a poor device to keep a dirigible at a uniform height. Mr. Vaniman expects to accomplish this by means of a ballonet inside the gas bag of the "Akron," the ballonet to be filled with or emptied of air as becomes necessary.

But whatever happens to the dauntless half-dozen souls after they see the outlines of Atlantic City fade into the west and look down to see only the waves beneath them and the clouds around them, they will nevertheless live in history as pioneers in a limitless field. Mr. Vaniman says they will get safely and quickly across—and he has studied the proposition more than anybody else and ought to know.

GOVERNMENT REFLECTION ON WHITE RUBBER RINGS.

ACCORDING to a statement of the Washington Agricultural Department in its *Farmers' Bulletin*, vegetables often spoil after being sterilized, because of defective fruit jar rings. It is poor economy to buy cheap rubbers or to use them a second time. Black rubbers, it is added, are more durable than white ones. This last statement seems open to question.

DEMOUNTABLE, DISMOUNTABLE, DETACHABLE AND REMOVABLE RIMS.

SOMETHING that would eliminate altogether, or at least greatly reduce the hard labor and mechanical complications incidental to tire troubles on the road, has been the dream of the builder and user of the automobile ever since it came into general use. A large proportion of the inventions that relate to self-propelled vehicles, are in some way connected with tires and many have to do with removable rims.

The objects aimed at by the designers of removable rims, in addition to compactness and light weight, have been simplicity of

ization apparent at an early stage, and the Standard Rim Co., of Akron, Ohio, was one of the fruits of this need.

Although tire manufacturers generally had long recognized the necessity for standardization not one of them controlled sufficient patents to produce a rim that would interchangeably take all makes of both straight and clincher tires and at the same time provide for quick detaching and demounting. Various ideas were followed up, but it was found that none of them were practicable without including some of the technical or mechanical principles embodied in other rims which were covered by patents.

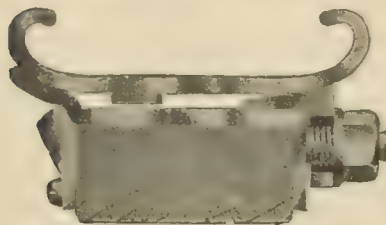
Finally certain important tire manufacturers who had been responsible for a large proportion of the rims heretofore made,



Type 1—For all Straight Side and Clincher Tires. (Clamp Locked.)



Type 2 For all Straight Side and Clincher Tires. (Clamp Unlocked.)

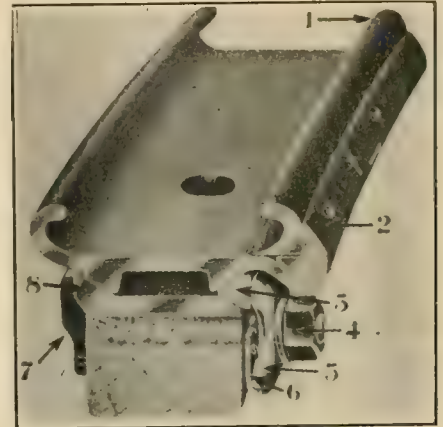


Type 3—For all Clincher Tires (Wedge in Position).

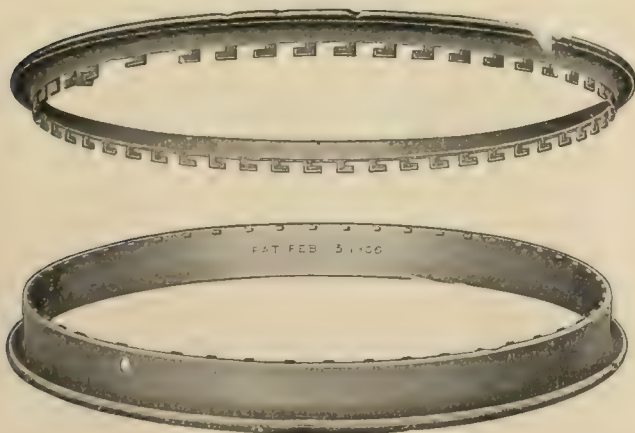


Type 3 For all Straight Side Tires (Wedge in Position).

UNITED RIM CO., DEMOUNTABLE, DETACHABLE.



FIRESTONE QUICK DETACHABLE CLINCHER.



CONTINENTAL DEMOUNTABLE RIM AND TOOL.



DIAMOND DEMOUNTABLE.

construction, small number and simplicity of parts, ease of removal, including freedom from liability to rust or stick fast, if left for long undisturbed, and reasonable first cost. These advantages are naturally claimed indiscriminately by all manufacturers of demountable rims.

Hundreds of rims have been invented during the past few years, but for some time they failed to appeal to the motorist, who manifested a leaning towards the quick detachable tire types. Ultimately, however, the labor and delay involved in pumping up tires on the road brought the remountable into its own and it is coming more and more into use. In the following it is not the intention to even enumerate all the rims on the market, but to briefly mention the types best known and in commonest use.

The many types of rims made the desirability of their standard-

transferred to the United Rim Company, all of their rim patents, together with engineering data and other information that would render possible the establishment of a uniform standard. By eliminating all features of negative value that prevent interchangeability and making the rims conform at the same time to the best of established engineering principles, the standardization thus effected resulted in the adoption of three rims. They fit all straight side and clincher tires and also embody efficient means for detaching the tire from the rim and for demounting the rim from the wheel. As adopted, these rims embody the good points of the Goodyear, Diamond (Marsh), Continental (Gilbert), and Goodrich types, with the addition of such new features as have been demonstrated to be of value.

The Continental "A. D." Demountable Rim (Gilbert type) is

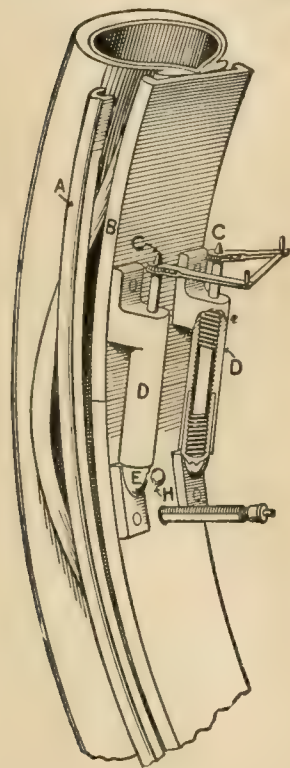
adapted for clincher, quick detachable and Dunlop tires. The removal of the rim is effected by extracting four of the eight wedges that secure it, and inserting a hinged tool.

The Diamond Demountable rim is secured to the wheel by five bolts passing through the felloes. On removing these bolts and the two nuts from the reinforcement strip where the felloe is recessed to admit the valve stem, by means of a brace and socket wrench, the rim can be easily slipped off the wheel.

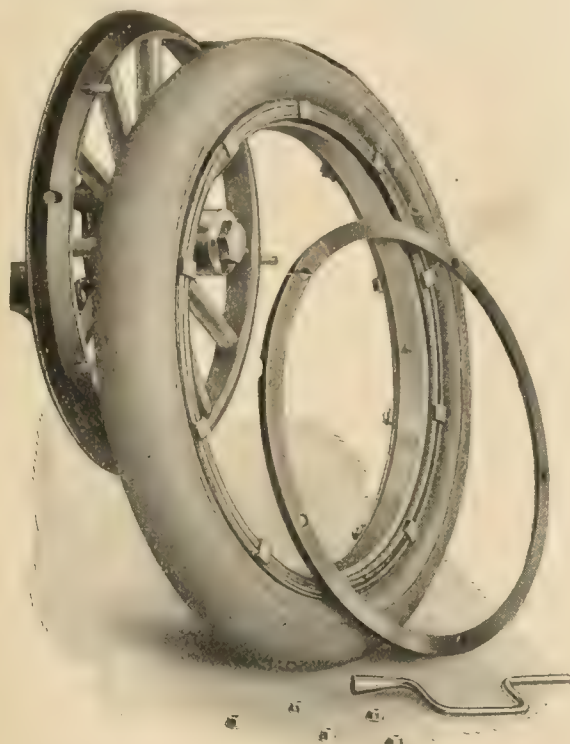
The Goodyear Tire & Rubber Co.'s (Doolittle) rim has an

clamping ring, demountable rim nut, demountable rim clamp, demountable rim clamp bracket, demountable rim bolt, demountable rim felloe band. It is a solid and not "split" rim.

The Fisk Removable Rim, comprises wheel rim, tire rim and expanding rim and securing bolts. The wheel rim is shrunk on to the wheel felloe in the regular way. It is fitted with a hole into which a dowel pin on the tire rim fits to prevent creeping. The tire rim is made with a hollow centre to ensure lightness and good bearing for the expanding ring. The expanding ring



GOODYEAR DOOLITTLE RIM.



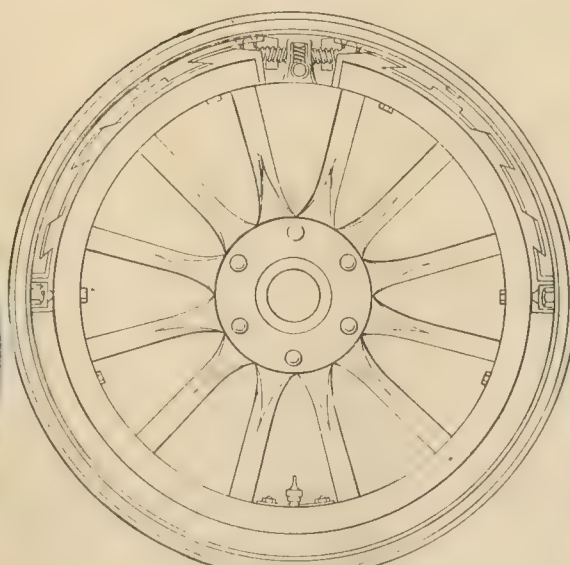
FISK REMOVABLE RIM.



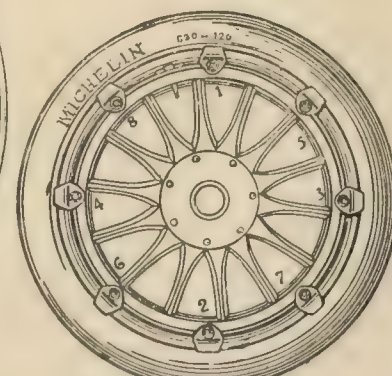
DORIAN REMOVABLE RIM.



REPUBLIC RIM.



HOWARD QUICK DEMOUNTABLE.



MICHELIN DEMOUNTABLE.

expansible base, side flanges, contracting and expanding screws, telescoping housings, etc. It is worked by a simple ratchet wrench.

The Firestone Quick detachable clincher demountable rim, comprises the following parts: Clincher side ring, locking ring,

is beveled on the inside to correspond with the outside bevel of the wheel rim and is operated by means of five nuts, applied to bolts which pass through felloe, wheel rim and expanding ring.

The Republic rim has a locking ring which fits over the turned-down edge of the base-plate and the heel of the removable flange.

A wedge-shaped key-piece is inserted in the split ring and secured by three cap screws.

The Michelin Demountable Rim was one of the earliest to be put to practical use, especially in speed trials. It has eight wedge-bolt nuts on the front of the wheel, which are removed by means of a brace socket wrench. By inserting the thin end of spur lever between the removable rim and the permanent band, near the highest wedge clamp and using slight leverage, the clamp may be removed bodily and the rim taken off.

The Dorian rim is in two halves which are hinged together and can be expanded until the tire is secured. The attachment to the wheel is made by means of wedges. The removal of four of these wedges, each of which is held by a single nut, allows the removal of the rim.

The Howard Quick Demountable Rim has an expansible and contractible rim that holds the tire to the wheel by friction, by lugs that prevent creeping and by lock rivets devised to prevent slipping.

The manufacturers of rims have also turned their attention to the requirements of aviators. The tires used on aeroplanes are so much lighter than the ordinary make and the shocks to which they are subject notably in alighting, so severe, that they are very liable to injury and the wise aviator recognizes the importance of being able to promptly repair such damage.

RUBBER TIRE PROTECTION.

ABRASION against the road surface is the primary cause of rubber tire deterioration; subsequent unfavorable conditions and circumstances—inadequate inflation and consequent rim-cutting, punctures or cuts, bruises, sand or water-blisters, etc.—which complete their destruction, are in most cases only contributory factors, for which hard wear and consequent reduction of rubber substance, has prepared the way.

Under these circumstances it is only to be expected that the efforts of inventors to perfect some device, whereby, without impairment of its resiliency, a tire would be guarded against this destructive wear, should be watched with interest by automobilists, especially where it is found practicable to combine, with such protection, anti-skidding properties.

The means thus far employed for this purpose have varied widely in character and include the hardening, by compounding with different substances and otherwise, of the rubber surface and the distribution over it of studs, corrugations, etc., of harder rubber, the complete covering of the surface exposed to wear with a supplementary leather "shoe" or strip, specially tanned and treated to increase resistance to wear and the effects of moisture and in some instances vulcanized to a rubber friction fabric or directly to the body of the tire and made either plain or studded with metal bosses. A similar device is made with a rubber, in place of the leather foundation, and some inventors even encase the tread of the tire in an armor of more or less elastic, overlapping plates, closely resembling the "plate mail" worn by knights of old.

As far as their original purpose is concerned, *i. e.*, the protection of the tire against excessive wear or external injury, some of these devices serve their purpose admirably, but almost all those of a removable character are open to objection for one or all of several reasons.

In the first place, they are liable to allow grit and sand to find its way between protector and tire, which, with the almost inevitable friction, be it ever so slight, is disastrous to the rubber surface, or, and this is equally objectionable, they admit water between casing and covering, which, in its effect on the rubber tire, is almost, if not quite as bad. There is also a tendency on the part of some of these protectors to "creep" on the tire, the heat engendered as a result of the consequent friction, especially if moisture be also present, being particularly injurious.

Thus, while in many respects, the separate tire protector has its good points, it cannot be regarded as perfect and motorists are still looking for some device that will protect this, the most expensive item in their equipment.

In the meantime, it cannot be denied, that in the case of most of the applied tire protectors, their weak point is to be sought, not in the protective medium itself, but in the means of securing it in place and it is to the improvement of this feature that the inventor must direct his ingenuity, if he wishes to obtain a satisfactory measure of success.

INDIA-RUBBER GOODS IN COMMERCE.

EXPORTS FROM THE UNITED STATES.

THE following is an official statement of the value of exports of manufactures of india-rubber and gutta-percha from the United States, for ten fiscal years, ending June 30:

Years.	Belting, packing and hose.	Boots and shoes.	All other rubber.	Total.
1910-11	\$2,163,416	\$2,219,430	\$6,564,402	\$10,947,248
1909-10	1,960,825	1,984,739	5,115,331	9,060,895
1908-09	1,498,445	1,292,673	3,823,956	6,615,074
1907-08	1,347,775	1,614,290	3,743,040	6,705,105
1906-07	1,253,369	1,231,898	3,729,643	6,214,910
1905-06	1,221,159	1,505,082	2,966,144	5,692,385
1904-05	994,100	1,214,342	2,572,375	4,780,817
1903-04	879,476	1,086,364	2,469,750	4,435,590
1902-03	819,985	1,056,491	2,299,875	4,176,351
1901-02	634,146	1,046,315	1,781,941	3,462,402

Exports of rubber boots and shoes (in pairs) have been as follows, by fiscal years ending June 30:

Years.			
1902	2,594,708	1907	2,310,420
1903	2,307,401	1908	3,080,253
1904	2,310,808	1909	2,396,435
1905	2,390,539	1910	3,791,084
1906	2,693,670	1911	3,984,312

Exports (in value) of reclaimed rubber and of waste rubber have been as follows:

Years.	Reclaimed.	Waste.
1910-11	\$781,650	\$723,664
1909-10	535,795	578,944
1908-09	414,861	402,897
1907-08	418,738	449,727
1906-07	665,109	548,695
1905-06	511,843	339,507
1904-05	522,902	204,945

IMPORTS INTO THE UNITED STATES.

Years.			
1910-11	\$875,125	\$61,283	\$936,408
1909-10	1,154,347	80,567	1,234,914
1908-09	1,391,770	71,819	1,463,589
1907-08	1,956,590	93,545	2,050,135
1906-07	2,262,783	191,064	2,453,847
1905-06	1,992,413	208,172	2,200,585
1904-05	1,389,064	117,735	1,506,799
1903-04	821,562	335,480	1,157,042
1902-03	665,972	225,198	891,170
1901-02	449,756	127,780	557,536

GREAT BRITAIN AND IRELAND.

OFFICIAL statement of exports of manufactures of caoutchouc for the first six months of three years:

	1909.	1910.	1911.
Boots and shoes	£78,742	£86,988	£69,376
All others	755,903	897,199	961,804
Total value	£834,645	£984,187	£1,031,180
In U. S. money	\$4,061,800	\$4,789,546	\$5,018,237

Value of "Apparel" waterproofed by any process—first six months of the year: In 1909, £125,466; in 1910, £231,370, and in 1911, £302,059.
Exports of rubber footwear amounted to 79,814 dozen pairs in 1909; 83,106 dozen pairs in 1910, and 66,521 dozen pairs in 1911.

Recent Patents Relating to Rubber.

UNITED STATES OF AMERICA.

ISSUED JULY 4, 1911.

- N**O. 996,611. Sprayer. M. D. Buskirk, Paw Paw, Mich.
 996,739. Fireman's hood. F. W. Vinton, Weehawken, N. J.
 996,796. Protective cover for pneumatic tubes. F. Rosdorff, Potsdam, Germany.
 996,836. Surgical appliance. G. A. Conrad, Houghton, Mich.
 996,870. Automobile rim holding and tire-pumping device. E. C. McCullough, Greenwich, Conn.
 996,882. Automobile tire pump. J. J. Reddy, Jersey City, N. J.
 996,937. Fountain pen. W. R. Mulock, Winnipeg, Manitoba, Canada.
 996,970. Rubber-covered roll. I. P. Burnham, Stoughton, Mass., assignor to Stoughton Rubber Co., Boston, Mass.
 996,999. Armored hose. J. J. Mulconroy and E. S. Morris, Philadelphia, Pa.
 997,033. Sock and like suspender. P. E. Bailly, M. A. Vautier and E. C. M. Godard, all of Paris, France.
 997,047. Apparatus for removing foreign matter from india-rubber, gutta-percha, balata and the like. Morland M. Dessau, London, England.
 997,242. Clothes sprinkler. A. L. Connelly, Pittsburg, Pa.

Trade Marks.

- 50,309. The Omo Mfg. Co., Middletown, Conn. The word *Omo*. For fancy goods, furnishings and notions.
 51,149. Imperial Rubber Co., New York, N. Y. The word *Liberty*. For insulating tapes, paints, etc.
 51,150. Imperial Rubber Co., New York, N. Y. The word *Premier*. For insulating tapes, paints, etc.
 51,153. Imperial Rubber Co., New York, N. Y. The word *Irco*. For insulating tapes, paints, etc.
 51,156. Imperial Rubber Co., New York, N. Y. The word *Challenge*. For insulating tapes, paints, etc.
 55,971. The Beacon Falls Rubber Shoe Co., Beacon Falls, Conn. The word *Fisole*. For boots, shoes, etc.

ISSUED JULY 11, 1911.

- 997,323. Horseshoe pad. C. E. Pearl, Beaumont, Mass.
 997,331. Teat for baby soothers and pacifiers. F. Schultz, London, England.
 997,398. Pneumatic tire. F. A. Macon, Henderson, N. C.
 997,443. Pneumatic tire. T. Dunn, London, England.
 997,474. Pin protector. W. C. Stuckel, Newark, N. J.
 997,487. Horse boot. M. J. Brassell, Cambridge, Mass.
 997,633. Hose coupling. J. J. McCarthy, Erie, Pa., assignor of four-tenths to Eric Car Works, Inc.
 997,646. Tire armor. A. M. Bruce, Fulton, Mo.
 997,668. Vehicle wheel. J. J. Haines, Indianapolis, Ind.
 997,687. Pneumatic tire cover. A. J. Michelin, Paris, France.
 997,708. Tire. C. T. Schwartz, Philadelphia, Pa.
 997,745. Detachable rim flange for the wheels of motor cars and other vehicles. T. E. Bridgman, Swansea, England.
 997,747. Elastic webbing. S. Brown, assignor to the Nashawannuck Mfg. Co., both of Easthampton, Mass.
 997,752. Protector for pneumatic tires. E. T. Thweath Clark, Comanche, Okla.
 997,855. Hose coupling. F. Robinson, Casey, Ill.
 997,853. Vulcanizing device for rubber tires. W. C. Risbridger and M. W. Risbridger, assignors to W. Trostler and S. I. Rose, all of Cleveland, Ohio.
 997,877. Tire-carrying rim for vehicle wheels. G. Webb, Monmouth, England.

Trade Marks.

- 54,404. Rayolite Co., Boston, Mass. The word *Rayolite*. Raw or partly prepared materials.
 54,704. Wallach Bros., Ltd., London, England. The word *Evertrustyle*. For belting, hose, machinery packing and non-metallic tires.
 55,099. Merchant & Evans, Camden, N. J. For tire receptacles.

ISSUED JULY 18, 1911.

- 998,042. C. H. Semple, Trenton, N. J. Tire case.
 998,127. Tire for vehicles. E. Siegel and M. J. Cantor, N. Y., assignors of fifty-one one hundredths to Jacob Ruppert, Jr., twenty-four and one-half one hundredths to E. Siegel and twenty-four and one-half one hundredths to M. J. Cantor, all of New York, N. Y.
 998,148. Surgical instrument. R. A. Bachmann, Newport, R. I.
 998,172. Pump for inflating rubber tires. C. A. Haas, St. Louis, Mo.
 998,366. Tire chain. V. Mancini, Granville, N. Y.
 998,369. Tire cleat. T. J. McKenzie, assignor of one-fourth to T. G. Peck and C. A. Peck, all of Barberton, Ohio.
 998,413. Puncture-closing device for pneumatic tires. A. Smith, Stuart, Neb.
 998,474. Apparatus for shaping plastic material, such as india-rubber, gutta-percha and the like. M. M. Dessau, London, England.
 998,476. Vehicle tire. J. W. Driscoll, Central City, Col.

Trade Marks.

- 51,152. Imperial Rubber Co., New York, N. Y. The word *Majestic*. For belting, hose, machinery packing, etc.

- 51,604. The B. F. Goodrich Co., Akron, Ohio. The word *Signal*. For belting, hose, machinery packing, etc.

ISSUED TUESDAY, JULY 25, 1911.

- 998,666. Demountable rim construction. E. A. Baker, assignor to Rapid Removable Rim Co., both of New York.
 998,668. Vehicle wheel tire. J. B. Barnes, Fort Wayne, Ind.
 998,753. Tire. G. S. Connor, St. Paul, Minn.
 998,803. Hair-washing hood. O. B. Salisbury, New York, N. Y.
 998,804. Hair-washing hood. O. B. Salisbury, New York, N. Y.
 998,841. Hose coupling for air brakes. N. Clegg, Neodesha, Kan.
 998,874. Spray brush. E. M. Crawford, Corozal, Panama.
 998,880. Demountable rim. P. E. Doolittle, Toronto, Ontario, Canada.
 998,966. Tire for vehicle wheels. S. Heinrich, Differdingen, Germany.
 998,977. Water bag. J. A. Murray, assignor of one-half to J. L. Mahoney, both of New Haven, Conn.
 998,980. Tire. J. J. Patton, New York, N. Y.
 999,010. Ankle support and protector. H. J. Collins, Taunton, Mass.
 998,085. Demountable tire rim. B. C. Ball, Portland, Ore.
 999,086. Method of forming tire rims. B. C. Ball, Portland, Ore.
 999,100. Apparatus for removing foreign matter from india-rubber, gutta-percha, balata and the like. M. M. Dessau, London, England.
 999,132. Rain skirt. L. F. Suddick, Dallas, Tex.
 999,138. Demountable rim. L. E. Younie, assignor to the O'Gorman-Younie Company, both of Portland, Ore.
 999,157. Pneumatic rubber tire. C. E. Eckrode, assignor to J. Ellwood Lee Co., both of Conshohocken, Pa.

Trade Marks.

- 49,751. The Arlington Co., New York, N. Y. The word *Rubberine*. For fancy goods, furnishings and notions.
 54,365. Habirshaw Wire Co., Yonkers and New York, N. Y. For electrical machines and supplies.
 54,815. Smyth-Despard Co., Utica, N. Y. The word *True Brand*. For belting, hose, machinery packing and non-metallic tires.
 56,591. The Faultless Rubber Co., Ashland, Ohio. The word *Challenge*. For dental, mechanical and surgical appliances.
 56,914. Eberhard Faber, New York, N. Y. For rubber erasers.

GREAT BRITAIN AND IRELAND.

PATENT SPECIFICATIONS PUBLISHED.

The number given is that assigned to the Patent at the filing of the application, which in the case of these listed below was in 1909.

*Denotes Patents for American Inventions.

[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, JULY 5, 1911.]

- 5,850 (1910). Tire attachment to rims. E. J. Clark, Leytonstone, London.
 5,854 (1910). Coagulating rubber. T. Cockerill, Colombo, Ceylon.
 5,855 (1910). Treating rubber, etc. T. Cockerill, Colombo, Ceylon.
 5,866 (1910). Jackets and covers for wheel tires. J. G. A. Kitchen, Scotforth, Lancashire.
 5,931 (1910). Synthetic caoutchouc; Isoprene and its homologues. W. H. Perkin, Manchester; F. E. Matthews and E. H. Strange, London.
 5,932 (1910). Synthetic caoutchouc; Isoprene. W. H. Perkin and C. Weizman, Manchester, and F. E. Matthews and E. H. Strange, London.
 5,980 (1910). Wheel tire. F. A. Churcher, Great Baddow, Chelmsford, Essex.
 5,994 (1910). Felloes or rims for vehicle wheels. A. Turnbull, Glasgow, Scotland.
 5,996 (1910). Tire attachment to rims. H. Silvester, Newcastle-under-Lyme, Staffordshire.
 6,306 (1910). Spongy resilient fillings for tires. R. H. Pyvus and E. M. Pyvus, Derby.
 *6,378 (1910). Marking golf balls. J. J. Blumberg, Brooklyn, N. Y.
 6,405 (1910). Rubber tip for boots. J. J. Eckert, Strood, Kent.
 *6,462 (1910). Vehicle wheels. J. Richardson, Buffalo, N. Y.
 6,486 (1910). Artificial rubber. A. G. Bloxam, London.

[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, JULY 12, 1911.]

- 6,593 (1910). Tire attachment to rims. J. Lomax, Charlton-on-Medlock.
 6,674 (1910). Manufacture of rubber pneumatic tire covers. H. A. Levens, Bromley, Kent.
 6,678 (1910). Non-skid attachment for tires. I. W. Crutchlow, London.
 6,717 (1910). Protector for pneumatic tire. G. H. Short, Radstock, near Bath.
 6,846 (1910). Rubber protectors for boots, etc. A. J. Smith, London.
 6,866 (1910). Rubber-coated fabric for tire repair. E. C. Lacey and R. Surridge, London.
 7,139 (1910). Extracting resins from rubber. General Caoutchouc Co., Paris, France.
 7,153 (1910). Devulcanizing rubber. C. P. Bary, Paris.
 7,158 (1910). Rubber core for tires. R. K. Evans, London.
 [ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, JULY 19, 1911.]
 7,204 (1910). Making rubber sole footwear. J. E. Chaper, Northampton.
 *7,295 (1910). Pneumatic cushions for vehicle suspensions. W. I. Twombly, New York.
 7,301 (1910). Pneumatic tires. B. B. Hill, London.

- 7,356 (1910). Rubber sole and heel protectors for boots, etc. A. I. W. Lengrum, Mardryke, Cork, Ireland.
- 7,487 (1910). Protective cover for pneumatic tire. W. Fiala, Jern. Bo. Austria.
- 7,515 (1910). Pneumatic tire. J. H. Barton, Egremont, Cheshire.
- *7,580 (1910). Attaching tires to rim. G. W. Slater and J. M. Benham, Oakland, Cal.
- 7,599 (1910). Rubber brake block for roller skate. W. W. Semmler, London.
- 7,629 (1910). Elastic bands for wearing apparel. J. D. Tassy, Budapest, Hungary.
- *7,647 (1910). Elastic band for boxing gloves. S. Cline, Philadelphia, Pa. [ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, JULY 26, 1911.]
- 7,897 (1910). Rubber ferrules for hat pins. J. H. Floyd and P. V. Williams, Penrygraig, South Wales.
- 7,902 (1910). Springs for the cores of golf balls, etc. J. Child and B. S. Attwood, Manchester.
- 7,905 (1910). Rubber block tires. H. Duncan, Glasgow, Scotland.
- 7,907 (1910). Rim attachment for pneumatic tires. E. Squires, Saltley, Birmingham.
- 7,917 (1910). Elastic composition. W. E. W. Richards, London.
- *7,942 (1910). Elastic tires. L. M. Nelson, Pennington, New Jersey.
- 7,964 (1910). Elastic hose supporters. T. Morton, Birmingham.
- 8,022 (1910). Elastic vehicle wheels. E. C. Kingsford, London.
- 8,027 (1910). Tire attachments to rims. H. W. Lake, London.
- 8,185 (1910). Knee protector with rubber fastenings. L. Lechner Michalkowitz, Silesia, Austria.
- 8,199 (1910). Brush and like handles. J. R. Batley, London.
- 8,216 (1910). Vehicle wheels. R. Haddan, London.
- 8,432 (1910). Port protectors for hat pins. G. M. H. Payne, Upper Norwood, London.
- 8,434 (1910). Stopper for medicine administering vessels. E. M. Bajom, Paris.

THE FRENCH REPUBLIC.

PATENTS ISSUED (with Dates of Application).

- 423,899 (December 20). G. Neff. Automatic machines for coating with celluloid, rubber, gutta percha, etc., strips of steel for the manufacture of bones for corsets, etc.
- 423,904 (December 20). J. J. Patton. Improvements in tires for vehicle wheels.
- 423,966 (March 1). Company known as Millwall Rubber Co., Ltd. Arrangement for the manufacture of soft or hard rubber articles by direct moulding from pulverized vulcanized rubber.
- 424,023 (December 15). P. Minaud. Process of repairing pneumatic tires by reinforcement in the thickness either exterior or interior of the burst tire.
- 424,074 (March 3). A. Martin. Elastic tire for vehicle wheel.
- 424,112 (March 4). H. G. Hugon. Rubber block tires and protective shields.
- 424,175 (December 24). S. Gouillardon. Pneumatic tire.
- 424,242 (November 24). A. Joly and E. Davier. Process of recovering benzine and its homologues.
- 424,244 (November 29). J. Horowitz. Unbreakable air chamber for automobiles, for bicycles and motorcycles.
- 424,270 (December 13). F. Knipp. Protector for pneumatic tire for vehicles of all kinds.
- 424,345 (November 19). P. L. J. Degruilly. Sectional pneumatic wheel.
- 424,389 (December 23). E. Balazs. Protective band for pneumatic tires for automobiles and other vehicles.
- 424,474 (December 31). J. Guerrero. Elastic tire for vehicle wheels.
- 424,497 (December 31). J. Donken. Improvement in elastic tires for vehicles.
- 424,543 (January 3, 1911). J. MacDonnell. Pneumatic tire.
- 424,649 (January 6). G. Bouquillon. Improvement in connecting rod pneumatics.
- 424,725 (January 4). The company known as The International Rubber Co. Process and apparatus for extracting rubber or rubber-like substances from plants containing them.
- 424,831 (January 12). J. D. Stidder. Improvements in tires for vehicles.
- 424,870 (March 23, 1910). M. Bouchee. Portable system of vulcanization.
- 424,961 (January 17, 1911). H. H. Carver. Improvement in manufacture of articles made from old rubber, ebonite, vulcanite or other analogous substances.
- 424,966 (January 13). P. Beausoliel. Anti-skidding attachment for wheels.
- 424,986 (March 26, 1910). C. Morel. Elastic tires for vehicle wheels.
- 424,994 (January 18, 1911). F. G. Herrmann. Protective cuirasse for wheel tires.
- 425,000 (January 18). B. Muench. Process of manufacturing rubber shoes from separate pieces.
- 425,078 (January 21). L. Morane. Arrangement with extensible core for the vulcanization of pneumatic tires.
- [NOTE.—Printed copies of specifications of French patents can be obtained from R. Robert, Ingenieur-Conseil, 16 avenue de Villier, Paris, at 50 cents each, postpaid.]

AN OFFICIAL REPORT, forwarded by a United States consul, places the number of Pará rubber trees in various stages of growth in Cochín, China, at one million, three-fourths of which were planted prior to 1910, and about 15,000 tappable. The number of trees planted will be increased by 4,000,000, if the plans at present pending are carried out.

A MAN IN A MILLION.

THAT Francis H. Holton, eighty years old, dean of the rubber sundries trade, retired since 1900, but still vigorous, alert, kindly, should get the patent numbered 1,000,000, and a rubber patent at that, is a subject for congratulations all around.

Probably no man in his line is better known than Mr. Holton. He was born as long ago as 1831, in Northfield, Massachusetts, and it is interesting to chronicle that he is a cousin of the late Dwight L. Moody, and that both of them were clerks together in Boston when young. Mr. Holton, when he was quite a boy, went to work for his uncle, Mr. Fred Holton, who was then with the Hayward Rubber Company. His first work was scrubbing the sulphur from rubber shoes, and also "blocking"

old-fashioned pure gum shoes. In 1854 he went to New York and obtained employment in a small hard rubber factory owned by a man named Hering. There he met Charles Goodyear and became further interested in the future of india-rubber. A little later he was able to secure a partner, a Professor Parmelee, and together they started a small rubber factory at the corner of



FRANCIS H. HOLTON.

Thirty - seventh street and Broadway. This partnership continued until 1860, when Mr. Holton decided to carry on the business alone and moved his works to Adams street, Brooklyn. Eight years later he took a Mr. Gray in as a partner, the firm name being Holton & Gray. Mr. Gray remained a partner until 1870, then sold his interest to C. B. Dickinson; in 1874 Mr. Holton also sold his interest to Dickinson, the factory being then operated as the Brooklyn Rubber Works. Later Mr. Holton started a factory in Gold street, New York, and built up a fine business. It was while in this factory that he met the late Dr. B. F. Goodrich, who induced him to leave New York and go to Akron to take charge of the specialty department of the B. F. Goodrich Company. Mr. Holton remained with the Goodrich Company for thirteen years, when he retired to spend his time in traveling and recreation.

The Holton tire is planned to be a substitute for the pneumatic. It has a cellular or honey-combed yielding part, supported by a solid ring filling about half of the inner portion



THE HOLTON TIRE. THE MILLIONTH PATENT.

of the shoe. To this solid portion are attached a series of flexible V-shaped springs. The illustration shows the inner portion of the tire with the shoe removed.

A Book for everybody interested in tires—"Rubber Tires and All About Them"—this office.

News of the American Rubber Trade.

WILL PROTECT VALUABLE PATENT RIGHTS.

THE Bowers Rubber Works (San Francisco, Cal.) are giving notice of their intention to protect their patent on one-piece diagonal, cross-expansion piston packing and to do it vigorously. The packing in question is the invention of Henry Dods, an engineer at one of the great mines on the Comstock Lode, and possesses a special faculty of expanding under pressure. The company has the exclusive right to manufacture it under the inventors' patents.

REPUBLIC RUBBER CO. INCREASES MANUFACTURING FACILITIES.

To enable them to keep up with orders, the Republic Rubber Company have contracted for the erection of a new building at their Youngstown, Ohio, plant. It will be 75 x 200 feet, of brick and re-inforced concrete, and of the "saw-tooth" type. It will be used entirely for the calendering process in their tire-making department.

NO INFRINGEMENT BY HARTFORD RUBBER WORKS COMPANY.

A suit by the Metallic Rubber Tire Company, of Jersey City, New Jersey, against The Hartford Rubber Works Company, in the United States District Court for the District of Connecticut, has been decided for the defendants. The cause of action was the alleged infringement by the Midgley non-skid tread, of patent No. 609,320, issued August 16, 1898, to Dr. Calvin Thayer Adams, of New York, of which the plaintiffs are now owners.

That patent had covered "a vehicle tire," and more specifically a bicycle tire; a claim having been eliminated which had been previously made in respect to a tire with wire interwoven in the tread. In the suit now brought this claim was substantially renewed. The present decision of the court is considered to indicate that inventions relating to bicycles, which may since have been brought to bear on the automobile industry, will not be regarded with much weight in litigated cases.

METALLIZED AEROPLANE FABRIC.

A NEW European fabric for aeroplanes and balloons is being imported by the Theo. H. Gary Company, of New York City. After being thoroughly rubberized it has been covered with a layer of light metal. As it reflects a large percentage of the light this fabric prevents the expansion of gases by the sun's rays besides minimizing wind friction.

ADDITION TO FISK RUBBER CO.'S PLANT.

Three of the buildings of the Fisk Rubber Company's plant at Chicopee Falls, Massachusetts, are being raised a story. This will give them about 25,000 square feet additional floor space, the greater part of which will be used for office purposes and the remainder for the regular tire manufacturing departments.

WEST INDIAN PROSPECTS FOR RUBBER GOODS.

Home from a visit to the West Indies on behalf of the Good-year Tire & Rubber Company, C. W. Martin, Jr., general Southern manager, and J. M. Chapman, foreign representative of that company, report prospects good for the increased sale of American goods. Cuba, Porto Rico, St. Thomas, Dominica, San Lucia and Barbados were visited and the travellers report the field ripe for a systematic invasion of American manufactures.

NEW YORK ROYAL RUBBER CO.—SETTLEMENT.

The New York Royal Rubber Company (Weingarten & Durst) effected a settlement with creditors on the basis of 35 cents on the dollar, payable 25 cents cash, and 10 cents by note. The petition filed against them has been dismissed.

VOORHEES TIRE LIFE PROLONGERS.

The value of a tire being judged by its durability, the merits of the standardized "Ideal" inner sleeve and casing, made by the Voorhees Rubber Manufacturing Company, Jersey City, New Jersey, are meeting with deserved recognition, as indicating the general character of the company's line of automobile accessories.

NEW NON-PUNCTURABLE TIRES.

A SUCCESSFUL demonstration of the "Bridge" pneumatic tire, invented and patented by Clarke F. Fisk, of Allentown, N. J., was lately given at the United and Globe Rubber Company's factory, Trenton, where the tire will probably be made. Its principal feature is a specially constructed tread, for which the inventor claims the merit of rendering the tire puncture-proof, while giving three times the wear of an ordinary tire as well as marked resiliency.

"THERE IS NOTHING LIKE RUBBER."

A NEW JERSEY charter was recently granted the National Hygienic Floor Company, a \$1,000,000 corporation, of which Linton Satterthwait, the Trenton lawyer, is registered agent, the objects of the company being the construction of hygienic floors in railway cars, offices, public buildings and private residences. It will doubtless give its attention largely to the merit of rubber for the purposes indicated, thus benefiting Trenton industry.

IMPORTANT ADDITION TO THE DIAMOND PLANT.

The Diamond Rubber Co., of Akron, is erecting, at a cost of \$26,000, a modern fireproof building, forming an addition to the milling department.

SYSTEMATIC RUBBER ROBBERIES.

Albert Obeski, aged 17, one of the hands at the Essex Rubber Works, Trenton, was recently arrested while at work on a charge of robbing the firm. It was alleged that he had been systematically taking quantities of crude rubber.

MINNESOTA TIRE LAW.

A law, passed on July 1, by the Legislature of Minnesota, requires that all automobile tires shall be branded with the year of their manufacture, sellers of such tires unbranded being guilty of a misdemeanor. No effort seems to have been made to prosecute dealers and branch houses, who held stocks of unbranded tires when the law went into effect.

DIAMOND TIRES IN MANILA.

In connection with the increasing favor of automobiles in the Middle and Far East, it is of interest to note that a set of Diamond tires was recently shipped to the Hon. W. Cameron Forbes, Governor-General of the Philippine Islands, for use on his personal machine. A further proof of the efficiency of these tires is afforded by the fact that at a recent meeting of the Chiefs of Departments in the city of Manila, the purchasing agent was instructed to buy Diamond tires for all department automobiles.

INNER SHOES FOR TIRES.

Doubling the tire mileage in conjunction with immunity from blowing out and puncture are among the advantages claimed for the "Innershu," manufactured by the Inner Shoe Tire Co., of Grand Rapids, Michigan. It is made of bullet-proof Sea Island cotton fabric, and by exactly fitting a tire relieves any strain from within, at the same time protecting the tube.

HOOD RUBBER COMPANY—DIVIDEND.

The Hood Rubber Company, Boston, Massachusetts, declared and paid its regular quarterly dividend of 1¾ per cent. on its preferred stock on August 1.

B. & R. RUBBER CO.—INCREASED MANUFACTURING FACILITIES.

The addition of three new boilers and a tandem compound engine, with various new machines in the manufacturing departments, will enable the B. & R. Rubber Company, North Brookfield, Massachusetts, to increase its working force by about 40 men and keep a double shift working day and night.

PERSONAL MENTION.

Judge LeBaron Colt, Mr. Russell G. Colt, and his gifted wife, Ethel Barrymore, recently had a very narrow escape through the breaking of the front axle of the touring car in which they were riding.

F. E. Stockwell, Philadelphia manager of the Boston Wover Hose and Rubber Company, spent August at Holly Beach, New Jersey, and incidentally proved himself an expert salt water fisherman.

C. A. Emerson, purchasing agent of the United States Rubber Company, is now on the "*Adriatic*" on his way back from a two months' trip in Europe, devoted to rest and relaxation.

Prof. Rusby, the expert pharmacologist and authority on guayule, palo amarillo, etc., who has become involved, through a red tape entanglement in the imbroglio that threatens to deprive the Department of Agriculture of the valuable services of Prof. H. W. Wiley, the eminent chemist and analyst, will be remembered as one of the speakers at the last New York dinner of the Rubber Club of America.

Edgar B. Davis, of the General Rubber Company, was taken sick in Sumatra the latter part of June, the result of too hard work in the tropics, and went into the mountains of Java to recuperate. The doctors there advised him to go to Neuenahr, Germany, to get the benefit of the baths. He stayed there five weeks and was greatly benefited. He is now spending a short time at San Moritz, Switzerland, but expects to return to this country about the first of October.

Mr. F. H. Sanford, of A. H. Alden, Limited, Manaus, Brazil, after a summer spent in England and the United States, returned to Brazil by the Booth Line August 15. Mrs. Sanford and son will remain in the United States until October, when she will join her husband.

W. F. Bass, General Manager of the General Rubber Company, returned about the middle of August from a month's visit in Europe, where he devoted himself to crude rubber problems, spending considerable time in the offices of the General Rubber Company in London and Liverpool, and also in the crude rubber markets at Antwerp and Rotterdam.

To commemorate his retirement as sales-manager of the Diamond Rubber Company, in New York, the fellow-salesmen of Harvey J. Woodward, gave a dinner in his honor at the Hotel Cadillac. The company at the same time extended a welcome to Norman E. Oliver, his successor.

Elisha S. Williams, president of the Rubber Goods Manufacturing Company, is expected in New York within the next few days after a two months' absence in Europe.

Homer E. Sawyer, general manager of the United States Rubber Company, who has been passing the greater part of the summer at the Mt. Washington Hotel, Bretton Woods, is expected back at the New York office immediately after Labor Day.

J. Simoa Da Costa, of the firm of the Alves Braga Rubber Estates and Trading Company, Limited, Pará, is spending the month of September in the United States.

Lester Leland, Vice-President of the United States Rubber Company has spent the summer at his fine estate in Manchester-by-the-Sea, Massachusetts.

TRADE NOTES.

It is very rarely that an advertising expert forsakes his particular field to take up literary work. In the case of Mr. John P. Lyons, who has left the United States Rubber Company to accept a position on the editorial staff of *THE INDIA RUBBER WORLD*, it is simply a case of returning to one's first love. For many years Mr. Lyons was a newspaper writer and editor in Boston, and literary work has always appealed to him more strongly than has work in commercial lines. Mr. Lyons' engagement with *THE INDIA RUBBER WORLD* begins with September of this year.

The Western Rubber & Supply Company, Kansas City, Missouri, are installing a complete, solid tire rebuilding plant.

The Toledo Tire & Repair Company, Toledo, Ohio, have the distributing agency for the Firestone pneumatic motor truck, and carriage tires and rims.

The Fegley Tire Chain Company, of Philadelphia, Pennsylvania, and the Pearsall-Traver Manufacturing Company, New York, New York, have united to form one company, the Reliance Tire Chain Company, with offices and factory in New York.

The Fisk Rubber Company, Chicopee Falls, Massachusetts, recently ordered thirty Brush light-delivery trucks shipped to the leading cities of the country. They will be used by salesmen to carry supplies and repairs.

The South Bend Tire & Rubber Company, South Bend, Indiana, will establish a factory in that city for the manufacture of automobile tires. The company is financed by Akron and Mansfield capitalists.

K. L. Horst, formerly a foreman in the factory of the Continental Tire Company, Hanover, Germany, has opened a repair shop and garage at Springfield, Ohio.

The Western Tire & Specialty Company has commenced business at Wichita, Kansas. It will deal in tires and accessories exclusively.

The Republic Rubber Company, Youngstown, Ohio, has erected a store for its Pacific Coast branch in San Francisco. It is a two-story and basement, pressed brick structure, 70x137 feet, and is in charge of Mr. M. E. Murray.

The Lake Shore Tire shop has been established at Sheboygan, Wisconsin. It will repair and market automobile tires.

The Federal Rubber Manufacturing Company, Milwaukee, Wisconsin, have installed a branch in Chicago. This is one of the first established by the new tire company and is in line with its policy to have branches and agencies in all of the principal cities of the country. Mr. George W. Stephens, formerly with the American Tire & Rubber Company, is manager, and Mr. Frank Loofbourrow has severed his connection with the United State Tire Company to become assistant manager. The new quarters at 1434 Michigan avenue are commodious, and the company enters the Chicago market particularly well fitted to get business, both because of its desirable location and the personnel of the people in charge. The territory covered by the Chicago branch will be the entire States of Illinois and Iowa and the northern portion of Indiana.

The McEwen Vulcanizing Company, of Long Island City, New York, advise *THE INDIA RUBBER WORLD* that they have sold their gas vulcanizers recently to the following: Kelly Springfield Tire Company, J. Ellwood Lee Company, Quaker City Rubber Company, A. Delfruge (on Forty-first street, only French tires), Republic Rubber Tire Company, Twentieth Century Tire Company, Gillette Tire Company, Seamless Rubber Company, United States Motor Tire Company.

Arrangements are completed to reopen the rubber factory at Setauket, L. I., which has been closed for the last three years. The buildings have been thoroughly overhauled and much new machinery has been installed. The new company is known as the Co-operative Rubber Company, and will manufacture rubber shoes, boots and tennis shoes. Joseph Elbersen, as usual, will be in charge of the factory.

NEW INCORPORATIONS.

BELTO COMPANY, August 2, 1911, under the laws of New York. Authorized capital, \$25,000. Incorporators: Abraham Rabowitz, 68 Lenox avenue; Henry J. Levy, 64 West 144th street; Isidore P. Levy, 561 West 163rd street; all of New York City. Location of principal office, Manhattan. To manufacture patented rubber belt device for trouser bands, etc.

Eagle Rubber Company, July 5, 1911, under the laws of Connecticut. Authorized capital, \$25,000. Incorporators: Louis C. Bullock, Benjamin Sack and Francis S. Tipper; all of Stamford, Conn. To manufacture and sell rubber substitutes, etc.

Germelite Manufacturing Company, July 26, 1911 under the laws of New Jersey. Authorized capital, \$500,000. Incorporators: Thomas F. Farrell, Arthur C. Reeves, both of 15 Exchange place, Jersey City, N. J., and Hugh E. Western, 150 Madison avenue, New York City. To manufacture, sell and use and deal in Germelite; to buy, sell, manufacture and deal in generally, at wholesale and retail, rubber goods, etc.

R. H. Hoskins Company August 10, under the laws of New York. Incorporators: Roy H. Hoskins, 628 West 114th street, New York City. Location of principal office, Brooklyn, New York.

Kutz Auto Tire Company, July 28, 1911, under the laws of Delaware. Authorized capital, \$1,000,000. Incorporators: M. H. Kutz, 20 Plymouth street, Springfield, Massachusetts; Percy Heap, 540 Canal street, Holyoke, Massachusetts, and Morris Friedberg, 150 Nassau street, New York City. To manufacture the woven leather tire for automobiles.

La Masica Banana & Rubber Plantation Company, Limited, June 14, 1911, under the laws of Louisiana. Authorized capital, \$100,000. Incorporators: H. W. Hullinghorst and Dr. Mary Armand, both of New Orleans, Louisiana. The company has been incorporated to purchase, acquire, lease, etc., real estate, for the purpose of growing bananas, rubber, etc.

McKenna Rubber Company, August 1, 1911, under the laws of New York. Authorized capital, \$2,000. Incorporators: James H. and Kathryn E. McKenna, both of Schenectady, New York, and Frank L. McKenna, Whitehall, New York. Location of principal office, Schenectady, New York. To manufacture rubber bushing to be used on glasses.

Mystic Rubber Company, August 3, 1911, under the laws of Massachusetts. Authorized capital, \$15,000. Incorporators: William B. Marshall, Everett; John W. Meldrum, Everett, and Edwin P. Fitzgerald, Somerville—all of Massachusetts. To manufacture, purchase and sell goods, wares, merchandise, etc.

Oceanic Raincoat Company, August 25, 1911, under the laws of New York. Authorized capital, \$5,000. Incorporators: David L. Soloman, Harriet Hyams and Maurice B. Hartman—all of 54 West 21st street, New York city. Location of principal office, Manhattan. To manufacture rubber coats.

Overman Motorcycle Tire Company, July 28, 1911, under the laws of New York. Authorized capital, \$25,000. Incorporators: John J. Reilly, 854 West 181st street; Henry W. Torney, 65 Park Row, and James A. Beha, 171 West Ninety-fifth street, all of New York City. Location of principal office, Manhattan. To manufacture tires for cycles; also supplies.

Progressive Raincoat & Clothing Company, July 29, 1911, under the laws of New York. Authorized capital, \$10,000. Incorporators: Alexander Sweetgall, 100 Hart street; Jacob Freedgood, 220 Throop avenue, and Israel Pearlman, 223 Throop avenue, all of Brooklyn, New York. Location of principal office Brooklyn, New York. To manufacture rubber clothing, etc.

Security Reliner Company, July 24, 1911, under the laws of New York. Authorized capital, \$50,000. Incorporators: Elmer I. and Grace A. Emerson, and Orrin T. Barbe, all of Montgomery, New York. Location of principal office, Montgomery, New York. To manufacture auto tire liners and other accessories.

Spring Tire Company, August 9, under the laws of New York. Authorized capital, \$8,000. Incorporators: Henry B. Hill, 180 Montague street; William Eiermann, 1981 Fulton street, and William A. Crane, 49 Stone street all of Brooklyn, New York. Location of principal office, Brooklyn, New York. The company has been incorporated to deal in rubber tires.

Triplex Tube Company, July 6, 1911, under the laws of Maine. Authorized capital stock, common, \$700,000; preferred \$300,000. Incorporators: Edward J. Connor, C. F. Tennant and William H. Culliver all of Portland, Maine. To manufacture, sell and deal in wheel tires of all kinds.

United Rubber Company, August 12, 1911, under the laws of New York. Authorized capital, \$100,000. Incorporators: Ada A. Sands, Eva C. Baker and Frank B. Vermilya, all of 5 Nassau street, New York City. Location of principal office, Manhattan. To manufacture rubber goods.

MORE RUBBER MILLS?

The Naugatuck *Daily News* advocates the appointment of an "Industrial Commissioner," whose business it would be to attract new industries to that city.

A FORTUNATE ESCAPE.

Philip McGrory, of Trenton (the well-known scrap rubber dealer), accompanied by Mrs. McGrory, two daughters and his brother-in-law, recently had a narrow escape in a head-on collision between his automobile and that of Fritz Guittner, of Philadelphia.

A GOODRICH RUBBER EXTRACTION DISPLAY.

Carrying the onlooker back to the original sources of rubber, the windows of the Goodrich Tire Company's Philadelphia branch were recently arranged to represent a South American rubber forest. Natives could be seen tapping the trees, smoking the latex and performing other work connected with extraction. All the implements used in gathering and preparing rubber were shown, and thousands stopped to witness the display.

ALLEGED INFRINGEMENT OF "IMPERIAL" TRADE MARK ENJOINED.

The United States Circuit Court for the Southern District of New York has issued an injunction at the suit of the McGraw Tire & Rubber Company directed against Edward C. Griffith, Automobile Tire Company, Griffith Tire & Rubber Company, and Imperial Tire Company. The defendants and their representatives are restrained, during the pendency of this action, from manufacturing, selling or offering for sale, any automobile tires with the name "Imperial" branded or moulded thereon, as their trade mark or trade name.

AUTO HORN DUTIES.

According to a recent customs decision, rubber bulbs imported in one package and an equal number of auto horns in another package by same steamer, could not be treated separately at 35 per cent. and 45 per cent. They had to be regarded as entireties, paying 45 per cent. as manufactures of metal.

A NEW SCRAP RUBBER COMPANY.

Under the style of H. Muehlstein & Company, Mr. Herman Muehlstein has entered business for himself, having on July 25, severed connection with the Loewenthal Company. He will deal exclusively in all grades of rubber scrap, both foreign and domestic, and in addition to a seven-story New York warehouse (with the newest labor-saving devices), will operate branches at Akron and Chicago, under the skilled management, respectively, of Mr. Charles Freshman and Mr. Charles Muehlstein.

HAMILTON RUBBER COMPANY EXPANDING.

The Hamilton Rubber Company, Trenton, New Jersey, are making preparations to double their capacity by the erection of a three-story building 70 x 180 feet, as an addition to their present plant.

UNITED STATES RUBBER CO.'S ISSUES.

TRANSACTIONS on the New York Stock Exchange for five weeks, ending August 20:

COMMON STOCK, \$25,000,000.

[The treasury of a subsidiary company holds \$1,334,000.]

Last Dividend, April 30, 1900, 1%.

Week July 29	Sales 3,700 shares	High 41	Low 40 ⁵ / ₈
Week August 5	Sales 7,300 shares	High 40 ⁵ / ₈	Low 37 ¹ / ₄
Week August 12	Sales 8,300 shares	High 37 ⁵ / ₈	Low 35 ³ / ₄
Week August 19	Sales 6,200 shares	High 38 ⁷ / ₈	Low 36
Week August 26	Sales 3,200 shares	High 37 ⁷ / ₈	Low 36 ³ / ₄

For the year—High, 47⁵/₈, March 1; Low, 35³/₄, August 12.

Last year—High, 54¹/₂; Low, 27.

FIRST PREFERRED STOCK, \$39,824,400.

Last Dividend, July 31, 1911—2%.

Week July 29	Sales 400 shares	High 113 ¹ / ₂	Low 113 ¹ / ₂
Week August 5	Sales 800 shares	High 113 ³ / ₄	Low 113
Week August 12	Sales 1,000 shares	High 112 ³ / ₄	Low 111
Week August 19	Sales 300 shares	High 111	Low 110 ¹ / ₂
Week August 26	Sales 1,125 shares	High 110	Low 108 ⁵ / ₈

For the year—High, 115¹/₂, July 7; Low, 108⁵/₈, August 26.

Last year—High, 116¹/₂; Low, 99.

SECOND PREFERRED STOCK, \$9,965,000.

Last Dividend, July 31, 1911—1¹/₂%.

Week July 29	Sales 100 shares	High 77 ¹ / ₈	Low 77 ¹ / ₈
Week August 5	Sales 300 shares	High 75	Low 74 ³ / ₄
Week August 12	Sales 400 shares	High 74	Low 72 ³ / ₄
Week August 19	Sales 225 shares	High 72 ¹ / ₂	Low 72 ¹ / ₂
Week August 26	Sales 200 shares	High 72 ³ / ₈	Low 72

For the year—High, 79, March 1; Low, 72, August 25.

Last year—High, 84; Low, 59¹/₂.

SIX PER CENT. TRUST GOLD BONDS, \$19,000,000.

Outstanding of the 1908 issue of \$20,000,000.

Week July 29	Sales 18 bonds	High 104 ⁷ / ₈	Low 104 ¹ / ₂
Week August 5	Sales 35 bonds	High 104 ³ / ₄	Low 104 ¹ / ₄
Week August 12	Sales 8 bonds	High 104 ³ / ₄	Low 104
Week August 19	Sales 32 bonds	High 104 ¹ / ₂	Low 104
Week August 26	Sales 17 bonds	High 104 ¹ / ₂	Low 104

For the year—High, 105, July 15; Low, 102³/₄, March 5.

Last year—High, 106; Low, 102¹/₄.

TRADE NEWS NOTES.

Norman E. Oliver, manager of the Buffalo, N. Y., branch of the Diamond Rubber Company, has been transferred to New York, where he takes the position of secretary of the Diamond Rubber Company, of New York.

Arthur Reeve, of the United States Rubber Co., has recently returned from a very successful seven weeks' trip to England and the Continent, during which he visited the principal buyers of his company's goods in London and Hamburg, Berlin, Copenhagen and other points. He made a careful canvass of the requirements of the European trade, with special reference to styles and lasts, and came back with a fund of valuable information regarding the export trade in rubber footwear.

The plant, formerly occupied by the Conant Rubber Co., at South Framingham, Mass., is being remodeled by the Fibre Products Co., who will use it for the manufacture of leather board goods.

F. J. Gleason, of the Walpole Rubber Works, who vibrates between Walpole, Massachusetts, and Granby, Quebec, where are situated the two factories of the company, has been doing the distance, when he could, this Summer, by automobile.

Fred. E. McEwen who has long been known both in the motor trade and in connection with tires, has formed a company known as the Auto Credit Co., Incorporated, explained as being "automobile bankers." Mr. McEwen, in describing his project, explains that automobiles have been about the only products heretofore sold on a strictly cash basis. That this was due to the supply being inadequate to the demand. Now that the demand is beginning to exceed the supply many will wish to buy on time. They, therefore, turn to the Auto Credit Company, select their car, any make, pay one-half cash, agree on a series

of monthly payments for the balance, and the Credit Co. purchases the car, hands it over to them for a 6 per cent. commission.

Recent changes in the organization of the Swinehart Tire and Rubber Co. include the appointment of W. J. Kreuder, formerly with the Goodyear Tire and Rubber Co., as general superintendent of the Swinehart Tire and Rubber Co.'s factory, at Akron, Ohio. J. J. Tompkins, formerly of the Hartford Rubber Works Co., Detroit branch, has been made manager of the Swinehart Co.'s branch in Philadelphia, with G. E. Grimes, formerly of the Philadelphia branch of the Republic Rubber Company, on his sales staff, and J. J. O'Connor has been made manager of the Swinehart agency in Bridgeport, Conn. At a special meeting of the company's stockholders it was unanimously voted to increase the capital stock from \$400,000 to \$800,000, the rapid growth of the company's business warranting this step.

The branch opened by the Firestone Tire and Rubber Co., Akron, Ohio, at 724 Main street, Buffalo, will be in charge of R. W. Ingersoll as manager, in place of R. W. Phelps as first announced. Mr. Ingersoll is well known in rubber trade circles as sales representative for the Firestone company.

After subjecting many fabrics to exhaustive practical tests, the United States government has selected, for the military aeroplanes, the rubberized aeroplane fabric manufactured by the Goodyear Tire & Rubber Co., Akron, Ohio. Not only is it non-absorptive and consequently free from wide variations in weight in the event of exposure to moisture, but it does not stretch or tighten when wet or drying, a serious fault with most fabrics hitherto used for this purpose.

The Mulconroy Co., Inc., Philadelphia, Pennsylvania, owing to the increased demand for their flexible metallic hose and "Seven League" sewed leather—soled rubber boots, have been compelled to secure larger quarters. Their new factory is at Nos. 108, 110 and 112 North Franklin street, where they will have three times as much room as at the present address.

Auerbach Bros. Co. (Chicago), dealers in scrap rubber, etc., whose incorporation was noted in last month's INDIA RUBBER WORLD, have equipped their warehouse, at Nos. 3101 to 3111 Market Square, with every necessary facility for handling scrap rubber, scrap metal, etc., and having a floor space of 20,000 square feet, are prepared for a large business, having all the requisite experience.

Fifty-nine distinct styles of dress shields, ten sizes for each, is what the full line of the I. B. Kleinert Rubber Company counts up.

The Empire Tire Company, Trenton, New Jersey, are on the market with a new disc tread for automobile tires. The disc is of frictioned fabric, moulded into the tread of the tire, and is designed not alone to prevent skidding, but adds to the life of the tire as well.

The L. Candee Rubber Company closed their big plant at New Haven, Conn., on August 15 for a month to allow of extensive alterations and repairs to the machinery.

Mr. A. Delfruge, a French rubber man, has opened a repair shop on Forty-first street, New York, where he repairs only tires of French make. Anti-Oskids, with German accent, or inner tubes of Swedish origin are taboo.

The new store house erected by the Converse Rubber Shoe Company, Malden, Massachusetts, to replace one of the buildings destroyed at the recent fire in their works, is completed and occupied.

E. A. Wild, formerly with the Republic Rubber Company, has begun business for himself at Youngstown, Ohio. He has the local agency for Republic tires.

TRADE NOTES.

Wright & Ditson (Boston, Massachusetts), well known as producers of the "green circle" golf ball, are also on the market with a "red circle" and "black circle," the latter, being a small ball.

The United States Tire Company claim that they are promoting the largest advertising campaign ever attempted by any tire company. It is gossipped that they have \$250,000 to spend.

The Michelin Tire Company, Milltown, New Jersey, true to their published convictions, have equipped their factory trucks with pneumatic instead of solid tires.

The Manufactured Rubber Company, Philadelphia, Pennsylvania, has declared a regular quarterly dividend of 1½ per cent. on their preferred stock.

Gorham-Revere Rubber Company have secured a long-term lease on a four-story brick building on Fifth street, Portland, Oregon. The ground floor will accommodate their offices and show-rooms, on the upper floors will be the retail and wholesale departments.

Rapid progress is being made with the Stoughton Rubber Company's new building, at Stoughton, Massachusetts, and the structure is now rapidly approaching completion.

A Pacific Coast branch for the Republic Rubber Company, is in course of erection at Golden Gate and Hyde streets, San Francisco. The building will be two stories and basement, 70x157 feet, and is about ready for occupancy. M. E. Murray, the company's general Western manager, will be in charge.

A unique advertisement of the Republic Rubber Company, youngstown, Ohio, is in the form of an artistic postal card, bearing on one side in colors a bird's-eye view of their plant and a picture of their Staggard tread tire, and on the address side a picture of the local agency in the territory in which it is sent out.

Alexander Dow, who will be remembered as the inventor of the non-puncturable inner tube, which had a pouch filled with paste and feathers that actually held air no matter how many nails were driven through it, has joined the selling force of Wyckoff, Church & Partridge, New York.

At the general meeting of The Miner Rubber Co., Ltd., Granby, Quebec, Mrs. S. H. C. Miner was elected president; Mr. W. H. Miner, vice president and general manager; Mr. R. R. Macaulay, secretary-treasurer, and Mr A. C. Flumerfelt, chairman of the executive committee. Mrs. Miner and Mr. Flumerfelt were also added to the board of directors.

In view of the erroneous ideas prevailing as to the tire expense in connection with commercial vehicles, a recent report, made to the United States Tire Co. by the Philadelphia (Pa.) Electric Co., may be of interest. The company in question uses a number of motor trucks and finds that six and seven thousand miles is not an uncommon record for their solid tires, while many that have run over 5,000 miles are still good for long service. Records of 8,922 and 8,817 miles were recorded for two tires still in excellent condition. Hartford solid tires were used on all these vehicles.

After covering 200,000 square feet of surface with Diamond tire signs, advertising car No. 4, of the Diamond Tire Company, recently reached Minneapolis after a sign-painting trip from Memphis, Tenn. One of the car's crew of five men was missing, having been badly injured when the car upset on a sandy stretch in Iowa. The company has eight such cars out, covering the country with Diamond tire signs.

Messrs. J. M. and L. Waterbury, who are reckoned as among the best polo players in the world, are interested in the Waterbury Company, and the New York Rubber Reclaiming Company.

The Hardman Tire & Rubber Company, Belleville, New Jersey, are making a strong canvass for the support of automobilists for "single-cure tires."

RUBBER-COVERED CALENDER ROLLS.

TO THE EDITOR OF THE INDIA RUBBER WORLD:

Sir: Information about any branch of the india rubber manufacture as carried on in the United States, is read with pleasure by practical mill managers here, in England. Hence the article on "Rubber Rolls of Many Sorts" was of great interest.

This does not mean that we intend to emulate our American cousins in making typewriter rubber-covered platens, not a bit of it; we have our own special work to do.

Here is a record of part of a rubber mill manager's daily duty in connection with the cotton and woolen industries of Lancashire and Yorkshire. These industries require a very great number of rubber-covered calender rolls for dyeing, printing of fabrics and wringing purposes.

The importance of this business rubber-covering of calender rolls is shown by the fact that it requires 20 qualities of compounded rubber, every one of which must be beautifully balanced in composition to fulfil the various working conditions required.

Our (1910) record, which will take some beating for heavy calender rolls is as follows:

January	22	Calender	Rollers	Covered.
February	43	"	"	"
March	33	"	"	"
April	19	"	"	"
May	10	"	"	"
June	24	"	"	"
July	21	"	"	"
August	22	"	"	"
September	23	"	"	"

217 = 9 months' covering.

The Bradford Dyers' Association, a combination of large dyeing firms, sometimes gives an order for 24 or more rolls at a time.

The paper industry makes use of the largest rolls. We have wondered to see with what great delicacy of touch a 5-ton rubber-covered roll will pick up tissue paper, and continue doing so for many miles in length without tearing; running about one mile in eight minutes.

We covered with rubber of special quality a 10-ton calender roll for a paper mill in Norway. Dimensions of roll on working face 164 in. x 26 in. diameter. Quantity of rubber used, 922 lbs.; using about \$1,000 worth of good quality rubber.

We covered two paper rolls for the Thames Paper Mills at Purfleet-on-Thames, with special dark quality; one roll 121 in. on working face by 22 in. diameter, which took 730 lbs. of rubber covering.

However, our largest piece of work was a set of six calender rolls, for Edward Lloyd, Limited, of Sittingbourne, Kent, known years ago as *Lloyd's Weekly* newspaper of London, one of the earliest Sunday newspapers. Curious ingenuity was shown in advertising *Lloyd's Weekly* newspaper. Among others, all the pennies Mr. Lloyd could lay hands on were embossed by a cleverly constructed machine with the title and price of the new journal. The *Times* soon drew attention to this defacement of Queen Victoria's coin, and so gave a better advertisement still. The skill of the American machine makers was put to a test which produced for *Lloyd's Weekly* Hoe's first great web machine—adopted immediately afterward by two morning papers in London. This set of six rolls took 3,767 lbs., or 1 ton 13½ cwt. of best quality rubber covering. ENGLISH EXPERT.

The Rubber Growers' Association of London, assembled in general meeting, awarded the gold medal of the association to A. Staines Manders, organizing manager of the International Rubber Exhibition. No award could be more appropriate or more deserved. We congratulate Mr. Manders.

NEW TRADE PUBLICATIONS.

BYERLEY & SONS (Cleveland, Ohio), manufacturers of Byerlyte asphalt, have just issued four very attractive and interesting booklets on asphalt and its various uses, with particular reference to the adaptability of Byerlyte products for every purpose for which asphalt is used including rubber compounding.

CENTRAL ELECTRIC COMPANY (Chicago, Ill.). A price list and discount sheet for August, 1911, applying to the publisher's 1909 catalogue, No. 26, the 88 octavo pages of this publication fairly cover the field of electrical supplies. The amount of matter included necessitates close printing, but care has been taken to make it legible, the excellent arrangement assisting in the attainment of this end.

TYER RUBBER CO. (Andover, Mass.). The new catalogue of the Tyer Rubber Co. leaves little to be desired in respect to its completeness and arrangement. It is, moreover, typographically letter perfect, with full page illustrations, many in color, that are beautifully executed. The catalogue shows a complete line of rubber sundries with their hard rubber accessories, together with many special lines for stationers and surgeons. It is solidly bound in crimson board, the covers being removable for the insertion of supplementary sheets.

ONE OF THE MOST BEAUTIFUL SAMPLE BOOKS that has come to our notice is that of J. C. Milne, and covers light-weight artistic proofings in a great variety of colors and shades. There are some 58 triangular samples in the first pages of the book, showing various kinds of artistic ornamentation in stripes, plaids and checks. These are on various colors of rubber-surfaced background. Following this are pages showing "colorings for grounds only" in black, blue, slate, tans, maroons, greens, etc.

BANIGAN RUBBER COMPANY (Baltimore, Maryland) issue List No. 116 H., covering their "wet weather goods." Its 44 legibly printed pages, 8 x 3¾ inches, describe and illustrate a full line of their "Lion Brand" waterproof garments of all styles, for men, women and children, quoting prices on each article and commenting on its qualifications. Attention is also called to the fact that the publishers are the exclusive selling agents for Banigan and Woonasquatucket brands of rubber boots and shoes.

ASBESTOS RUBBER GOODS.

THE use of asbestos in rubber compounding is as old almost as the rubber industry itself. It is only in the last few years, however, that it has assumed any great importance. German, and shortly afterwards, English manufacturers were the first to take it up on any considerable scale. At the present time, however, the Americans are using it freely, chiefly in insulation and mechanical lines. The pioneer in America was the Johns Pratt Co., of Hartford, Conn., who produced "vulcabeston," a hard rubber asbestos for a great variety of electrical purposes. Asbestos is also used in mechanical lines for a variety of steam packings, especially for superheated steam.

One of the most interesting of the developments of the use of asbestos in rubber compounds was the invention of the lining for automobile brakes. The first liners were of metal. The trouble was, however, that metal to metal in brakes sometimes "freezes." A mixture of rubber and asbestos in the form of a narrow belt, however, not only acted as a most efficient brake, but developed lasting qualities that were remarkable. If we are not mistaken, the Thermoid was the first in the field with this type of brake liner. There are today, however, many others, such as the "I-M Non Burn," the "Sa Best So," the "Moto-bestos," the "Multibestos," "Raybestos," etc.

Patented compounds cannot be considered secret, else why should they be published. As a rule they are chiefly valuable

for comparison or suggestion. The following show presumed uses for asbestos:

FOR INSULATION (AMERICAN).

5 lbs. asbestos.
2½ lbs. shellac.
¼ lb. coal tar.
1 lb. oak black.
¼ lb. paraffine.
2 lbs. silicate of soda.
1 qt. water.
1 lb. fir balsam or Burgundy pitch.
4 lbs. ground asbestos.
1 oz. sugar, sorghum, or glucose.
Saturated solution of 3 grs. oxalic acid.

INSULATION MATERIAL (AMERICAN).

60 lbs. of asbestos (for fire and heat resisting).
25 lbs. of rubber (for binding material).
15 lbs. of soapstone (as lubricating material).
Rubber may be raw or vulcanized, if raw add vulcanizing material. Mineral wool, fine spun glass, etc., may be substituted for asbestos. Powdered slate or pumice stone or talc may be added with or without the soapstone.

INSULATION (ENGLISH).

25 lbs. of Para rubber.
15 lbs. asbestos.
4 lbs. sulphur.

CORE PACKING (AMERICAN).

Core of asbestos instead of rubber.
In wrapping the core add ground asbestos to the rubber compound, apply to the canvass.

WOODITE OR WHALITE PACKING (ENGLISH).

19 lbs. asbestos fiber.
19 lbs. asbestos powder.
Earth wax.
41-3 lbs. finely ground charcoal.
10 lbs. whalebone, ground or shredded.
40 lbs. Pará rubber.
2½ lbs. sulphur.

HOSE AND BELTING (AMERICAN).

10 lbs. india rubber.
2 lbs. ground asbestos.
Vulcanizing material to suit.

NON-PUNCTURABLE TIRE TREAD (ENGLISH).

10 lbs. Pará rubber.
2 lbs. asbestos.
3½ lbs. litharge.
1 lb. lime.
5 lbs. powdered zinc.
12 oz. sulphur.

HARD RUBBER FOR SELF-LUBRICATING GEARINGS (ENGLISH).

14 lbs. plumbago.
14 lbs. asbestos.
4 lbs. rubber.
1 lb. sulphur.

THE ACRE TERRITORY AND BOLIVIA.

According to a recently discovered map, dated 1867, the Acre territory belonged to Bolivia. It is said that this fact may lead to Bolivian protests against the Acre treaty of 1870. However, a further report adds that the existence of the map of 1867 having been known to Rio Branco it will not change the aspect of the question.

Review of the Crude Rubber Market.

IN harmony with the New York prices and in marked contrast with the situation a year ago (when the European auctions heralded a further step in the decline) the July sales at Havre and Antwerp showed an advance of 8@14 per cent. According to cable advices the August auctions displayed a further rise of 5@8 per cent. These advances at typical points, make an average upward improvement of about 15 per cent. since June last.

In connection with this advance is a reduction of the stock in Antwerp, which, on July 31 last, was 465,734 kilos., as compared with 733,977 kilos. on June 30; standing at a lower figure than at the end of July in any recent year. This movement in the month of July indicates larger purchases for consumption. July sales represented 571,294 kilos., as compared with June sales 267,025 kilos. England for July showed an excess of 900 tons in deliveries over importations and a corresponding reduction in stock on July 31, as compared with June 30.

According to the news brought by a member of the trade who has lately come back from London, dealers in that market expected that the relative smallness of stocks would bring up-river Pará to the equivalent of \$1.20 or higher; particularly when the new crop begins to come forward towards the close of the year. Germany is expected to prove a large consumer, as soon as stocks of various qualities become more abundant. American stocks in jobbers' hands are likewise reported to be small. In harmony with London developments, the New York quotation for up-river fine on August 29 was \$1.16.

NEW YORK QUOTATIONS.

FOLLOWING are the quotations at New York for Pará grades, one year ago, one month ago, August 31—the current date:

PARA.	Sept. 1, '10.	Aug. 1, '11.	Aug. 31, '11.
Islands, fine, new.....	179@180	104@105	108@109
Islands, fine, old.....	none here	@107	110@111
Upriver, fine, new.....	196@197	114@115	117@118
Upriver, fine, old.....	198@199	118@119	119@120
Islands, coarse, new.....	94@ 95	61@ 62	62@ 63
Islands, coarse, old.....	none here	none here	none here
Upriver, coarse, new.....	142@143	95@ 96	97@ 98
Upriver, coarse, old.....	none here	none here	98@ 99
Cametá	95@ 96	67@ 68	67@ 68
Caucho (Peruvian) ball.....	135@136	96@ 97	96@ 97
Caucho (Peruvian) sheet....	none here	none here	none here

PLANTATION PARA.

Fine smoked sheet.....	190@191	133@134	138@139
Fine pale crepe.....	174@175	132@133	136@137
Fine sheets and biscuits.....	172@173	131@132	130@131

CENTRALS.

Esmeralda, sausage	118@119	84@ 85	86@ 87
Guayaquil, strip	none here	none here	none here
Nicaragua, scrap	116@117	84@ 85	84@ 85
Panama	none here	none here	none here
Mexican, scrap	115@116	83@ 84	83@ 84
Mexican, slab	none here	none here	none here
Mangabeira, sheet	none here	none here	none here
Guayule	72@ 73	43@ 44	45@ 46
Balata, sheet	@...	84@ 85	84@ 85
Balata, block	@...	63@ 65	63@ 64

AFRICAN.

Lopori, ball, prime.....	162@163	106@107	110@112
Lopori, strip, prime.....	170@...	none here	none here
Aruwimi	160@...	98@ 99	102@104
Upper Congo, ball red.....	158@159	101@102	110@112
Ikelemba	none here	none here	none here
Sierra Leone, 1st quality.....	155@156	98@ 99	92@ 93
Massai, red	155@156	92@ 93	93@ 94
Soudan Niggers	none here	91@ 92	none here
Cameroon, ball	95@ 96	65@ 66	70@ 71
Benguela	none here	70@ 71	none here
Madagascar, pinky	none here	80@ 81	83@ 84
Accra flake	none here	30@ 31	30@ 31

EAST INDIAN.

Assam	none here	81@ 82	84@ 85
Pontianak	6 1/2 @ 6 1/2	6 1/2 @ 6 1/2	6 1/2 @ 6 1/2
Borneo	none here	none here	none here

Late Pará cables quote:

	Per Kilo.		Per Kilo.
Islands, fine.....	4\$700	Upriver, fine.....	6\$000
Islands, coarse.....	2\$400	Upriver, coarse	
Exchange	16 3/16d.		
Latest Manáos advices:			
Upriver, fine	6\$200	Exchange	16 3/16d.
Upriver, coarse	4\$300		

NEW YORK PRICES FOR JULY (NEW RUBBER).

	1911.	1910.	1909.
Upriver, fine	\$.99@1.17	\$2.16@2.40	\$1.50@1.95
Upriver, coarse	82@ .96	1.48@1.55	1.05@1.20
Islands, fine .....	.92@1.10	2.08@2.25	1.41@1.48
Islands, coarse .....	.58@ .63	.98@1.03	.70@ .75
Cameta .....	.70@ .75	1.10@1.23	.80@ .92

New York.

In regard to the financial situation, Albert B. Beers (broker in crude rubber and commercial paper, No. 68 William street, New York), advises as follows: The situation in commercial paper is not much changed from a month ago, when we reported a good demand for the best rubber names at 4 @ 4½ per cent., and those not so well known 5 @ 5½ per cent.; except that the demand is increasing somewhat, as usual at this time of the year, and 4½ @ 5 per cent. are now the lowest rates for the best rubber names, and 5½ @ 5¾ per cent. for others.

African Rubbers.

NEW YORK STOCKS (IN TONS).

July 1, 1910.....	120	February 1, 1911	115
August 1	250	March 1	111
September 1	300	April 1	98
October 1	375	May 1	98
November 1	100	June 1	90
December 1	140	July 1	90
January 1, 1911	115	August 1	90

Para.

R. O. AHLERS & Co. report [August 1]:

The market remained stationary in accordance with news from consuming centers, buyers showing more interest at present, and sellers conserving a firm attitude.

R. O. AHLERS & Co. report [August 11]:

The market remained quiet but steady, showing no features of interest.

Statistics of Para Rubber (Excluding Caucho).

NEW YORK.

	Fine and Medium.	Coarse.	Total 1911.	Total 1910.	Total 1909.
Stocks, June 30.....tons	300	73	373	161	392
Arrivals, July	800	362	1,162	642	623
Aggregating	1,100	435	1,535	803	1,015
Deliveries, July	786	364	1,150	594	785
Stocks, July 31	314	71	385	209	230

PARA.

ENGLAND.

	1911.	1910.	1909.	1911.	1910.	1909.
Stocks, June 30.....tons	3,785	300	245	1,775	1,460	320
Arrivals, July	1,150	1,500	760	72	680	550
Aggregating	4,935	1,800	1,005	1,847	2,140	870
Deliveries, July	1,485	1,315	455	447	1,000	625
Stocks, July 31.....	3,450	485	550	1,400	1,140	245
World's visible supply, July 31.....tons	5,981	2,373	1,300			
Para receipts, July 1 to July 31.....	1,150	1,500	760			
Para receipts of caucho, same dates.....	350	890	330			
Afloat from Para to United States, July 31	216	219	none			
Afloat from Para to Europe, July 31....	530	320	275			

RUBBER STOCKS AT PARA.

Statistical returns for this year show stocks at Para:

	tons.		tons.
June 31	2,085	May 31	5,350
February 28	3,787	June 30	4,545
March 31	4,214	July 31	3,884
April 30	5,104	August 28	

Details of July movement of rubber at Para were:

Stock June 30.....	4,545
July receipts	1,400
	5,945
Shipments July to America.....	918
Shipments July to Europe.....	1,143
	2,061

Stock July 31 3,884 tons.

Of these 3,884 tons, 3,424 were in second hands, and 460 in first hands. There had been on July 31 a reduction of about 1,500 tons from the maximum of May 31.

Plantation Rubber from the Far East.

EXPORTS OF CEYLON GROWN RUBBER.

[From January 1 to July 17, 1910 and 1911. Compiled by the Ceylon Chamber of Commerce.]

	1910.	1911.
To Great Britain.....pounds	635,855	1,351,590
To United States.....	594,834	900,921
To Belgium	25,472	213,719
To Japan		21,684
To Australia	1,099	19,374
To Germany	8,946	11,553
To Canada	1,911	9,971
To Italy	841	3,597
To France		117
To Holland		100
To India		85

Total 1,268,958 2,532,711
[Same period 1909—596,866 pounds; same 1908—350,897 pounds.]

TOTAL EXPORTS FROM MALAYA.

[From January 1 to dates named. Reported by BARLOW & Co., Singapore. These figures include the production of the Federated Malay States, but not of Ceylon.]

	1909.	1910.	1911.
From Singapore (to June 30)...lbs	1,240,137	1,533,732	2,766,372
From Penang (to June 24).....	1,436,128	1,006,176	2,055,652
Fr'm Pt. Swettenham (to June 23)	3,741,591	5,591,756	
Total	2,676,265	6,281,499	10,413,780

LONDON.

The July advance has been maintained. During the earlier part of August, there was no lack of active inquiry for plantation rubber, but owing to the firmness of importers, business was more or less restricted. This was specially the case in prime Crepe Latex. In Balata demand was quiet, but importers maintained quotations.

An interesting feature of the recent advance has been the progress displayed at the close of each week, notwithstanding intermediate fluctuations. Spot prices for fine hard Para were:

WEEKLY MOVEMENT OF LONDON PRICES:

[In shillings and pence per pound.]

May 31	3/11	July 14	4/5½
June 2	4/1	July 21	4/7
June 9	4/1	July 28	4/8
June 16	4/1½	August 4	4/7½
June 23	4/1½	August 11	4/7½
June 30	4/1½	August 18	4/7½
July 7	4/2½		

ENGLISH RUBBER STATISTICS FOR JULY, 1911.

Total Stock July 31.

Imports. Deliveries. 1909. 1910. 1911.

LONDON.	tons.	tons.	tons.	tons.	tons.
Plantation and Malay.....	718	753	173	686	660
Rangoon and Assam	19	40	11	47	28
Penang	12	10	75	106	128
Borneo	7	22	54	102	137
Malay	89	81			104
Mozambique	32	43	34	177	129
Madagascar	5	2	5	16	19
West Indies and South America	19	23	107	125	149
Maltograsso	25	51	31	32	134
Africa	69	23	33	98	179
Various		1	1	10	5

Tons 995 1,049 524 1,399 1,672

Liverpool					
Para	481	1,295	247	1,125	2,486
Caucho	258	369	933	597	609
Mollendo	16	15	1		3
Manicoba, etc.	144	68	85	172	351
Carthage, etc.					
Africa	120	114	288	263	384

Tons 1,019 1,861 1,554 2,157 3,833
Total (England) tons, July 31..2,014 2,910 2,078 3,556 5,505
Total (England) tons, July 31..2,536 2,355 2,046 4,361 6,401

By latest cable advices the equivalent of \$1.16@1.18 had been bid for Para up-river fine. It is reported that English manufacturers hold smaller stocks of rubber than had been anticipated.

Liverpool.

WILLIAM WRIGHT & Co. report [August 1]:

Fine Para.—The market has been characterized by more trade activity, both here and in America; weak holders seem to have been cleared out. Considerable shipments have again been made to America, and, with small receipts, prices have steadily advanced (in the early part of the advance a large business was done on private terms) from 4s. to 4s. 8½d., closing steady at latter price. The so-called syndicate stock in Brazil is still unsold. It is reported that satisfactory arrangements have been made with the Bank to hold for a further length of time. However, it must be sold some time; until it is out of the way the market will be more or less nervous. Whether the financial difficulties of the Brazilian Aviadores will affect the quantity of the new crop remains to be seen, but the tone of the market at the close indicates a good demand, about 4s. 5d. to 4s. 6d. Receipts for the month are small, being 1,420 tons, including 260 tons Caucho, against 1,720 tons last month, and 2,330 tons, including 830 tons Caucho, in July, 1910. Deliveries for the month are 1,116 tons, against 1,392 tons last month, and 1,544 tons last year.

RUBBER FLUX

No. 17. Particularly adapted to softening material for tubing machine. Almost universally used for waterproofing wire.

No. 48. For fluxing pigments in compounding. A valuable adjunct to the manufacture of moulded goods as it DOES NOT BLOW UNDER CURE.

WRITE FOR PRICES.

Massachusetts Chemical Co., Walpole, Mass.

Sole Factors:
WALPOLE RUBBER WORKS
WALPOLE VARNISH WORKS
ELECTRIC INSULATION LABORATORY

THEODORE HOFELLER & CO.



Old Rubber



206-226 SCOTT ST.

BUFFALO, N. Y.

MINERAL **AMAX** RUBBER

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Yarns for every purpose
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Sole agent for U. S. and Canada of the well known brands

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Headquarters for

Surinam and Demerara Sheet Balata
Venezuelan Block Balata

Ceylon Plantation Rubber

97 WATER STREET

NEW YORK

British Crude Rubber Statistics.

OFFICIAL STATEMENT—JANUARY 1 TO JUNE 30.

WEIGHTS.			
	1909.	1910.	1911.
Imports	39,806,900	56,279,888	52,346,896
Exports	21,635,936	29,237,152	29,984,416
Net imports	18,231,024	27,042,736	22,362,480
VALUES.			
Imports	£6,282,294	£16,280,980	£10,415,368
Exports	3,804,399	8,448,898	6,731,945
Net imports	£2,477,895	£7,832,082	£3,683,423

BORDEAUX.

Recent advices from Bordeaux indicate that rubber is arriving on a smaller scale than was the case a year ago. May arrivals amounted to 148,250 kilos., as compared with 205,500 kilos. for the corresponding month of 1910. Somewhat closer figures mark the returns for June, which show 159,120 kilos., against 170,705 kilos. for June, 1910.

Business had been quiet in African rubbers, the prices at which importers held their stocks being considered too high in proportion to those of Pará descriptions. The position of the latter had impeded important transactions in other kinds.

BORDEAUX RUBBER IMPORTATIONS.

Comparative results covering the first six months of this and last year are as follows:

	1910.	1911.
January	294,600	144,105
February	329,260	265,050
March	265,125	241,385
April	261,980	227,185
May	205,500	148,250
June	170,705	159,120
Total—January-June	1,527,170	1,185,095

Soudan sorts and Conakry niggers constituted the largest proportion of recent imports.

HAVRE.

Importers have felt encouraged by the result of the July rubber auction, at which 61,618 kilos. were sold out of 62,739 kilos. offered. The average advance in price obtained over previous auction represented 7.58 per cent. For the August sale a quantity of about 80 tons had been declared. A fresh advance of 5@8 per cent. was established.

ANTWERP.

During the interval between the June and July sales, prices had stiffened; these conditions being reflected in the advance which took place at the latter, which equalled 10.10 per cent. on Congo descriptions and 14.20 per cent. on plantation rubbers. This movement was in sympathy with the course of the Havre July auction.

Out of 460,475 kilos. offered, 350,501 kilos. were sold, the separate quantities being:

	Offered.	Sold.
Congo descriptions	396,168	313,725
Plantation descriptions	28,075	27,255
Various descriptions	36,232	9,521
Total	460,475	350,501

For the August sale 235 tons had been declared. Telegraphic reports of sale indicate a further advance of 5@8 per cent. An important reduction in stock has been effected.

ANTWERP RUBBER STATISTICS FOR JULY.

DETAILS.	1911.	1910.	1909.	1908.	1907.
Stocks, June 30	773,977	460,517	476,420	684,866	671,793
Arrivals in July	263,051	249,899	529,920	227,202	613,064
Congo sorts	198,820	144,697	461,506	172,828	559,144
Other sorts	64,231	105,202	68,414	54,374	53,920
Aggregating	1,037,028	710,416	1,006,340	912,068	1,284,857
Sales in July	571,294	190,451	481,828	216,517	353,501
Stocks, July 31	465,734	519,965	524,511	695,551	931,356
Arrivals since Jan. 1.	2,484,073	2,335,107	2,933,424	2,833,027	3,191,798
Congo sorts	1,841,113	1,800,323	2,177,715	2,430,364	2,753,722
Other sorts	642,960	534,784	755,709	402,663	438,076
Sales since Jan. 1.	2,606,551	2,356,652	3,004,647	3,144,370	2,918,626

RUBBER ARRIVALS FROM THE CONGO.

AUGUST 3.—By the steamer *Elizabethville*:

Bunge & Co.	(Société Generale Africaine) kilos	62,000
Do	(Comptoir Commercial Conglais)	21,000
Do	(Chemins de fer Grands Lacs)	340
Do	(Cie. du Kasai)	32,200
Do	(Belgika)	320
Société Coloniale Anversoise	(Belge du Haut Congo)	480
Do	(Cie. du Lomami)	4,900
Do	(Société Comm. and Minière du Congo)	2,390
Do	(Sud. Cameroen)	25,800
L. & W. Van de Velde	(Société Comm. and Emanc. Africaine)	2,000
Williaert Freres		1,000
Société Generale de Commerce	(Alimaienne)	750
		153,180

AMSTERDAM.

About one-half of the rubber offered at the July sales met with ready sale at higher prices. *Hevea* plantation rubber commanded an advance upon valuations of 10 per cent. The relatively large proportion being unsold is attributed to the high prices asked by importers. The next sale will take place on September 29.

F. JOOSTEN reports [August 15]:

Our market remained very firm, with good demand. Several, partly important, lots were sold at good prices. Fine *Hevea* grades are very scarce, but some newly arrived Rambong lots are up for sale.

HAMBURG.

Latest advices report a firm market, showing but little change. Buyers are gradually advancing their limits.

IMPORTS FROM PARA AT NEW YORK.

The Figures Indicate Weight in Pounds.

AUGUST 1.—By the steamer *Rio Janeiro*, from Pará:

	Fine.	Medium.	Coarse.	Caucho.	Total.
Poel & Arnold	10,400	1,400	68,000		79,800
De Lagotellerie & Co.	15,300	3,600	35,000		53,900
New York Commercial Co.			20,500	1,300	21,800
Total	25,700	5,000	123,500	1,390	155,590

AUGUST 3.—By the steamer *Denis*, from Manáos and Pará:

Poel & Arnold	84,600	13,400	78,800	67,400	244,200
New York Commercial Co.	22,000	7,900	26,500	45,000	101,400
A. T. Morse & Co.	25,200	3,300	27,700	400	56,600
Hagemeyer & Brunn	9,300		2,000		11,300
Total	141,100	24,600	135,000	112,800	413,500

AUGUST 15.—By the steamer *Boniface*, from Manáos and Pará:

Poel & Arnold	134,700	75,400	131,000	97,700	420,800
New York Commercial Co.	102,700	36,200	72,000	66,800	277,700
A. T. Morse & Co.	58,800	5,000	44,400	34,400	142,600
Hagemeyer & Brunn	24,300	1,000	19,200		44,500
De Lagotellerie & Co.	16,800	2,900	23,100		42,800
Total	337,300	120,500	289,700	180,900	928,400

AUGUST 23.—By the steamer *Sao Paulo*, from Pará:

New York Commercial Co.	11,500	700	23,100		35,300
G. Amsinck & Co.	4,300	11,200	4,200	700	20,400
Hagemeyer & Brunn	4,300		4,000		8,300
Total	20,100	11,900	31,300	700	64,000

AUGUST 24.—By the steamer *Clement*, from Manáos and Pará:

Poel & Arnold	144,800	42,100	121,600	7,200	315,700
New York Commercial Co.	96,800	17,500	24,800	16,500	155,600
A. T. Morse & Co.	24,600	700	29,500		54,800
General Rubber Co.	42,600	1,300	14,600		58,500
Hagemeyer & Brunn	9,600		3,300		12,900
Total	318,400	61,600	193,800	23,700	597,500

PARA RUBBER VIA EUROPE.

		POUNDS.
JULY 6.—By the <i>Caribia</i> =Liverpool:		
General Rubber Co. (Fine).....	155,000	
Poel & Arnold (Fine).....	48,000	
Raw Products Co. (Fine).....	4,500	
Poel & Arnold (Coarse).....	11,000	
Raw Products Co. (Coarse).....	7,000	225,500
JULY 26.—By the <i>Grenada</i> =Bolivar:		
Iglesias Lobo & Co. (Fine).....	20,000	
American Trading Co. (Fine)....	7,000	
Iglesias Lobo & Co. (Coarse)....	9,000	36,000
JULY 28.—By the <i>Mauretania</i> =Liverpool:		
Poel & Arnold (Fine).....	225,000	
New York Commercial Co. (Fine)...	34,000	
General Rubber Co. (Coarse)....	33,500	292,500
JULY 29.—By the <i>Kaiserin Auguste Victoria</i> =Hamburg:		
New York Commercial Co. (Coarse)....	17,000	
JULY 31.—By the <i>Celtic</i> =Liverpool:		
General Rubber Co. (Fine).....	90,000	
C. P. dos Santos (Fine).....	11,500	
Robinson & Co. (Fine).....	9,000	
Muller, Schall & Co. (Fine)....	10,000	
N. Y. Commercial Co. (Fine)....	7,000	
Rubber Trading Co. (Fine).....	9,000	
Muller, Schall & Co. (Cauchos)...	15,000	151,500
AUGUST 2.—By the <i>Thames</i> =Mollendo:		
A. T. Morse & Co. (Cauchos).....	11,500	
AUGUST 7.—By the <i>Amerika</i> =Hamburg:		
Wallace L. Gough Co. (Fine)....	17,000	
Muller, Schall & Co. (Coarse)....	7,000	24,000
AUGUST 7.—By the <i>Batavia</i> =Hamburg:		
Wallace L. Gough Co. (Fine)....	13,500	
N. Y. Commercial Co. (Fine)....	8,000	
N. Y. Commercial Co. (Coarse)....	2,500	24,000
AUGUST 9.—By the <i>Grenada</i> =Bolivar:		
General Export & Comm. Co. (Fine)...	21,000	
AUGUST 9.—By the <i>Carmania</i> =Liverpool:		
Poel & Arnold (Fine).....	330,000	
Raw Products Co. (Fine).....	15,000	
N. Y. Commercial Co. (Fine)....	11,000	
N. Y. Commercial Co. (Coarse)....	5,500	361,500
AUGUST 9.—By the <i>Columbia</i> =Liverpool:		
A. T. Morse & Co. (Fine).....	28,000	
AUGUST 11.—By the <i>Cedric</i> =Liverpool:		
General Rubber Co. (Coarse)....	60,000	
C. P. dos Santos (Fine).....	11,000	71,000
AUGUST 12.—By the <i>Campania</i> =Liverpool:		
General Rubber Co. (Coarse)....	22,500	
Raw Products Co. (Coarse)....	22,500	
A. W. Brunn (Coarse).....	9,000	54,000
AUGUST 17.—By the <i>Trent</i> =Mollendo:		
General Rubber Co. (Fine).....	22,500	
General Rubber Co. (Cauchos)....	30,000	52,500
AUGUST 18.—By the <i>Pennsylvania</i> =Hamburg:		
Poel & Arnold (Coarse).....	22,500	
N. Y. Commercial Co. (Coarse)....	8,000	
Rubber Trading Co. (Fine).....	10,000	40,500
AUGUST 18.—By the <i>Mauretania</i> =Liverpool:		
Poel & Arnold (Fine).....	45,000	
Raw Products Co. (Fine).....	11,500	
Henry A. Gould Co. (Fine).....	5,500	
A. T. Morse & Co. (Fine).....	5,500	
James J. Johnstone (Coarse)....	11,500	
W. H. Stiles (Coarse).....	11,000	
N. Y. Commercial Co. (Cauchos)....	1,000	91,000
AUGUST 18.—By the <i>Baltic</i> =Liverpool:		
General Rubber Co. (Fine).....	60,000	
W. H. Stiles (Fine).....	4,500	
General Rubber Co. (Coarse)....	11,000	75,500
AUGUST 22.—By the <i>Coppename</i> =Bolivar:		
General Exp. Comm. Co. (Fine)....	8,000	
General Exp. Comm. Co. (Coarse)....	4,500	12,500
AUGUST 23.—By the <i>President Grant</i> =Hamburg:		
Robert Badenhorff (Fine).....	7,000	
AUGUST 24.—By the <i>Allianca</i> =Mollendo:		
New York Commercial Co. (Fine).....	10,000	

OTHER NEW YORK ARRIVALS.

CENTRALS.

[*This sign, in connection with imports of Centrals, denotes Guayule rubber.]

		POUNDS.
JULY 25.—By the <i>Colon</i> =Colon:		
G. Amsinck & Co.....	*27,000	
Chas. E. Griffin.....	*2,500	
Isaac Brandon & Bros.....	*1,500	
Jose Julia & Co.....	*1,000	*32,000
JULY 27.—By the <i>El Norte</i> =Galveston:		
Continental-Mexican Rubber Co.....	*80,000	

JULY 28.—By the *Prinz August Wilhelm*=Colon:

G. Amsinck & Co.....	4,000	
A. S. S. & Co.....	2,500	
Jose Julia & Co.....	2,500	
R. Del Castillo & Co.....	2,000	
A. Rosenthal & Sons.....	1,000	
J. Sambrada & Co.....	1,000	13,000

JULY 28.—By the *El Rio*=Galveston:

Continental-Mexican Rubber Co.....	*155,000	
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JULY 29.—By the *Esperanza*=Vera Cruz:

Charles A. Sykas.....	2,500	
Iglesias Lobo & Co.....	5,500	
Lawrence Import Co.....	1,500	
General Export Co.....	2,500	
E. Steiger & Co.....	1,000	
H. Marquardt & Co.....	1,000	14,000

JULY 31.—By the *Prinz Sigismund*=Colon:

G. Amsinck & Co.....	7,000	
A. M. Capen's Sons.....	5,500	
Roldau & Van Sickle.....	2,500	
Pablo, Calvert & Co.....	2,000	
Isaac Brandon & Bros.....	1,000	18,000

AUGUST 2.—By the *Eastern Prince*=Bahia:

J. H. Rossbach & Bros.....	13,500	
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AUGUST 4.—By the *El Occidente*=Galveston:

Continental-Mexican Rubber Co.....	*75,000	
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AUGUST 7.—By the *Morro Castle*=Frontera:

A. T. Morse & Co.....	5,000	
Lawrence Import Co.....	4,000	
E. Nelson Tibbals & Co.....	1,000	
Harburger & Stack.....	1,500	11,500

AUGUST 7.—By the *Panama*=Colon:

G. Amsinck & Co.....	8,500	
Hirzel, Feltman & Co.....	3,000	
Isaac Brandon & Bros.....	3,000	
Charles E. Griffin.....	2,000	
Mecke & Co.....	2,000	
Jose Julia & Co.....	1,000	19,500

AUGUST 7.—By the *Allemanina*=Colombia:

Maitland, Coppell & Co.....	6,000	
A. Jaranillo & Co.....	1,500	
Caballero & Blanco.....	1,500	
R. Del Castillo & Co.....	1,500	
A. Held.....	1,000	
G. Amsinck & Co.....	1,000	
Kunhardt & Co.....	1,000	13,500

AUGUST 7.—By the *Amerika*=Hamburg:

Geo. A. Alden & Co.....	11,500	
A. T. Morse & Co.....	5,500	17,000

AUGUST 8.—By the *Seguranca*=Tampico:

Ed. Maurer.....	*90,000	
For Antwerp.....	*33,000	*123,000

AUGUST 9.—By the *Prinz Joachim*=Colon:

G. Amsinck & Co.....	3,500	
Andean Trading Co.....	1,500	
J. A. Pauli & Co.....	1,500	
Graham, Hinkley & Co.....	1,000	
Gillespie Bros. & Co.....	1,000	
Isaac Brandon & Bros.....	1,000	9,500

AUGUST 9.—By the *Comus*=New Orleans:

Manhattan Rubber Mfg. Co.....	3,500	
George A. Alden & Co.....	2,500	
A. T. Morse & Co.....	1,500	
T. W. Morgan.....	1,000	8,500

AUGUST 9.—By the *Oceanic*=London:

Poel & Arnold.....	20,000	
--------------------	--------	--

AUGUST 9.—By the *El Mundo*=Galveston:

Continental-Mexican Rubber Co.....	*75,000	
Charles T. Wilson & Co.....	*8,000	*83,000

AUGUST 10.—By the *Camaguey*=Tampico:

Ed. Maurer.....	*45,000	
For Antwerp.....	*35,000	*78,000

AUGUST 11.—By the *Monterey*=Frontera:

Harburger & Stack.....	4,500	
E. Steiger & Co.....	3,500	
A. T. Morse & Co.....	2,000	
Maldonado & Co.....	1,500	
Lawrence Import Co.....	1,000	12,500

AUGUST 11.—By the *Matanzas*=Tampico:

Ed. Maurer.....	*135,000	
J. W. Wikson & Co.....	*3,500	
For Antwerp.....	*82,000	*220,500

AUGUST 14.—By the *Advance*=Colon:

G. Amsinck & Co.....	19,500	
Isaac Brandon & Bros.....	10,500	
Schutte, Bunemann & Co.....	4,500	
Andean Trading Co.....	2,500	
Mecke & Co.....	2,500	
Suzarte & Whitney.....	2,500	
Jose Julia & Co.....	1,500	
Pablo, Calvert & Co.....	1,000	
A. Held.....	1,000	45,500

AUGUST 15.—By the *El Sol*=Galveston:

Continental-Mexican Rubber Co.....	*115,000	
Charles T. Wilson & Co.....	*3,500	*118,500

AUGUST 15.—By the *Creole*=New Orleans:

Manhattan Rubber Mfg. Co.....	8,000	
G. Amsinck & Co.....	5,000	
George A. Alden & Co.....	4,000	
A. T. Morse & Co.....	2,000	19,000

AUGUST 15.—By the *Indian Prince*=Bahia:

A. Hirsch & Co.....	55,000	
Poel & Arnold.....	22,500	
New York Commercial Co.....	22,500	100,000

AUGUST 17.—By the *Fert*=Colombia:

Cortes Commercial Co.....	1,500	
A. M. Capen's Sons.....	1,000	
G. Amsinck & Co.....	1,000	
R. Del Castillo & Co.....	1,000	
Isaac Brandon & Bros.....	1,000	5,500

AUGUST 18.—By the *Mauretania*=Liverpool:

Poel & Arnold.....	8,000	
--------------------	-------	--

AUGUST 21.—By the *Albinga*=Colombia:

Scholz & Marturet.....	2,000	
R. Gallegor & Co.....	1,500	
A. Jaranillo & Co.....	1,000	
G. Amsinck & Co.....	1,000	5,500

AUGUST 21.—By the *Vigilancia*=Tampico:

New York Commercial Co.....	*200,000	
Ed. Maurer.....	*90,000	
For Antwerp.....	*5,000	*295,000

AUGUST 22.—By the *Byron*=Bahia:

New York Commercial Co.....	22,500	
-----------------------------	--------	--

AUGUST 22.—By the *Antilles*=New Orleans:

Robinson & Co.....	8,000	
A. N. Rothholz.....	3,000	
A. T. Morse & Co.....	3,500	
T. W. Morgan.....	1,500	16,000

AUGUST 23.—By the *El Valle*=Galveston:

Continental-Mexican Rubber Co.....	*40,000	
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AUGUST 24.—By the *Allianca*=Colon:

Isaac Brandon & Bros.....	15,000	
G. Amsinck & Co.....	15,000	
F. H. Feltman & Co.....	5,000	
Dumarest Bros. & Co.....	4,000	
Jose Julia & Co.....	1,500	40,500

AFRICAN.

POUNDS.

JULY 26.—By the <i>Caronia</i> =Liverpool:		
Poel & Arnold.....	15,000	
Muller, Schall & Co.....	4,500	19,500

JULY 28.—By the *Carolina*=Havre:

Rubber Trading Co.....	18,000	
------------------------	--------	--

JULY 29.—By the *Kaiserin Auguste Victoria*=Hamburg:

George A. Alden & Co.....	58,000	
General Rubber Co.....	4,500	62,500

JULY 31.—By the *Celtic*=Liverpool:

James T. Johnstone.....	6,000	
-------------------------	-------	--

JULY 31.—By the *Philadelphia*=London:

General Rubber Co.....	*34,000	
Muller, Schall & Co.....	11,000	45,000

AUGUST 3.—By the *Vaderland*=Antwerp:

A. T. Morse & Co.....	128,000	
Raw Products Co.....	7,000	135,000

AUGUST 5.—By the *Virginia*=Havre:

Poel & Arnold.....	65,500	
Rubber Trading Co.....	11,000	76,000

AUGUST 7.—By the *St. Louis*=London:

George A. Alden & Co.....	77,000	
---------------------------	--------	--

AUGUST 7.—By the *Lapland*=Antwerp:

A. T. Morse & Co.....	4,500	
Raw Products Co.....	3,500	8,000

AUGUST 7.—By the *Minnetonka*=London:

Raw Products Co.....	11,000	
----------------------	--------	--

AUGUST 7.—By the *Amerika*=Hamburg:

Poel & Arnold.....	50,000	
George A. Alden & Co.....	30,000	
A. T. Morse & Co.....	9,000	
Rubber Trading Co.....	8,000	
Robert Badenhorff.....	3,700	100,700

AUGUST 7.—By the *Batavia*=Hamburg:

George A. Alden & Co.....	45,000	
Wallace L. Gough & Co.....	34,000	
A. T. Morse & Co.....	22,500	101,500

August 9.—By the *Carmania*=Liverpool:
General Rubber Co..... 22,500
James T. Johnstone..... 13,500
A. T. Morse & Co..... 11,500
Poel & Arnold..... 11,500
George A. Alden & Co..... 5,500 64,500

August 11.—By the *Cedric*=Liverpool:
A. T. Morse & Co..... 7,000
James T. Johnstone..... 5,500 12,500

August 15.—By the *Kroonland*=Antwerp:
A. T. Morse & Co..... 115,000
Rubber Trading Co..... 90,000
New York Commercial Co..... 33,000
Wallace L. Gough & Co..... 22,500
Poel & Arnold..... 22,500
Muller, Schall & Co..... 15,000
W. H. Stiles..... 11,000
Robert Badenhoff..... 7,000
Robinson & Co..... 4,500
Raw Products Co..... 2,500 323,000

August 18.—By the *Pennsylvania*=Hamburg:
George A. Alden & Co..... 45,000
General Rubber Co..... 33,000
Rubber Trading Co..... 8,000
Poel & Arnold..... 5,500 91,500

August 18.—By the *Baltic*=Liverpool:
Muller, Schall & Co..... 15,000
General Rubber Co..... 15,000
A. T. Morse & Co..... 11,500
James T. Johnstone..... 8,000
Poel & Arnold..... 5,500 55,000

August 21.—By the *Bretagne*=Havre:
Muller, Schall & Co..... 22,500

August 23.—By the *Finland*=Antwerp:
A. T. Morse & Co..... 55,000
Wallace L. Gough & Co..... 20,000
Muller, Schall & Co..... 7,000 82,000

August 24.—By the *President Grant*=Hamburg:
Wallace L. Gough & Co..... 60,000
Ed. Maurer..... 30,000
George A. Alden & Co..... 25,000
Robert Badenhoff..... 15,000
General Rubber Co..... 13,500
Raw Products Co..... 9,000 152,000

EAST INDIAN.

[*Denotes plantation rubber.]

July 28.—By the *Majestic*=London:
Poel & Arnold..... *15,000
New York Commercial Co..... *7,000 *22,000

July 31.—By the *Philadelphia*=London:
Poel & Arnold..... *45,000
New York Commercial Co..... *11,500
Poel & Arnold..... 5,000
C. P. dos Santos..... 11,000 72,500

August 1.—By the *Minneapolis*=London:
A. T. Morse & Co..... *45,000
Poel & Arnold..... *45,000
Michelin Tire Co..... *22,500
James T. Johnstone..... *3,500
Robinson & Co..... 22,500 138,500

August 3.—By the *Vaderland*=Antwerp:
A. T. Morse & Co..... *55,000

August 3.—By the *Adriatic*=London:
Poel & Arnold..... *7,000

August 5.—By the *Argenfels*=Colombo:
A. T. Morse & Co..... *64,000
Poel & Arnold..... *7,000
H. W. Peabody & Co..... *1,000 *72,000

August 7.—By the *St. Louis*=London:
New York Commercial Co..... *16,000
Poel & Arnold..... *9,000 *25,000

August 7.—By the *Lapland*=Antwerp:
A. T. Morse & Co..... *50,000

August 7.—By the *Minnetonka*=London:
A. T. Morse & Co..... *16,000
Ed. Maurer..... *7,000
Charles T. Wilson..... *5,000
James T. Johnstone..... *3,000 *31,000

August 7.—By the *Batavia*=Hamburg:
New York Commercial Co..... *7,000

August 9.—By the *Carmania*=Liverpool:
Ed. Maurer..... *17,000

August 9.—By the *Oceanic*=London:
New York Commercial Co..... *45,000
Poel & Arnold..... *8,000
A. T. Morse & Co..... *5,000
Poel & Arnold..... 45,000 103,000

August 9.—By the *Vandalia*=Singapore:
Haebler & Co..... 22,500
L. Littlejohn & Co..... 11,000
Wallace L. Gough Co..... 11,000 44,500

August 11.—By the *Cedric*=Liverpool:
C. P. dos Santos..... 15,000

August 15.—By the *Kroonland*=Antwerp:
Rubber Trading Co..... *65,000

August 16.—By the *Olympic*=London:
A. T. Morse & Co..... *36,000
Michelin Tire Co..... *25,000
New York Commercial Co..... *15,000
James T. Johnstone..... *7,000
Poel & Arnold..... *5,000
Robinson & Co..... 18,000
Poel & Arnold..... 7,000 113,000

August 18.—By the *Pennsylvania*=Hamburg:
New York Commercial Co..... *7,000
Rubber Trading Co..... *7,000
Robert Badenhop..... *6,750 *20,750

August 18.—By the *Baltic*=Liverpool:
W. H. Stiles..... *4,500
C. P. dos Santos..... 13,500 18,000

August 23.—By the *Finland*=Singapore:
Poel & Arnold..... 11,000
Haebler & Co..... 5,500
A. W. Brunn..... *5,000 21,500

August 25.—By the *Kasembe*=Colombo:
A. T. Morse & Co..... *56,000
New York Commercial Co..... *30,000
Poel & Arnold..... *10,000 *96,000

GUTTA-JELUTONG.

August 3.—By the *Afghan Prince*=Singapore:
L. Littlejohn & Co..... 325,000
W. R. Russell & Co..... 135,000 460,000

August 9.—By the *Vandalia*=Singapore:
L. Littlejohn & Co..... 350,000
Manhattan Rubber Mfg. Co..... 150,000
Haebler & Co..... 200,000
Wallace L. Gough Co..... 175,000
W. R. Russell & Co..... 55,000
George A. Alden & Co..... 55,000 985,000

August 21.—By the *Dacre Castle*=Singapore:
L. Littlejohn & Co..... 350,000
George A. Alden & Co..... 220,000
Poel & Arnold..... 100,000
Wallace L. Gough Co..... 150,000
W. R. Russell & Co..... 100,000
Haebler & Co..... 150,000 1,070,000

August 24.—By the *Indra*=Singapore:
Wallace L. Gough Co..... 220,000
W. R. Russell & Co..... 90,000
L. Littlejohn & Co..... 220,000 530,000

GUTTA-PERCHA.

POUNDS.

August 21.—By the *Dacre Castle*=Singapore:
Haebler & Co..... 22,500

August 24.—By the *Indra*=Singapore:
L. Littlejohn & Co..... 45,000
Poel & Arnold..... 11,000 56,000

BALATA.

POUNDS.

July 26.—By the *Grenada*=Trinidad:
American Trading Co..... 10,000

August 7.—By the *Minnetonka*=London:
Wallace L. Gough Co..... 30,000

August 8.—By the *Saramaca*=Demerara:
Middleton & Co..... 7,000
Ed. Maurer..... 7,000 14,000

August 9.—By the *Grenada*=Bolivar:
American Trading Co..... 13,500
G. Amsinck & Co..... 10,000 23,500

August 15.—By the *Marowijne*=Bolivar:
Middleton & Co..... 20,000
Schutte, Bunemann & Co..... 35,000
G. Amsinck & Co..... 11,000
Ed. Maurer..... 11,500 77,500

August 22.—By the *Coppename*=Demerara:
Middleton & Co..... 8,000
Ed. Maurer..... 3,500
De Sola Bros. & Pardo..... 2,000 13,500

CUSTOM HOUSE STATISTICS.

PORT OF NEW YORK JULY.

Imports.	Pounds.	Value.
India-rubber	6,025,440	\$4,973,622
Balata	172,712	122,132
Gutta-percha	95,517	22,813
Gutta-jelutong (Pontianak)	3,180,154	155,032
Guayule	461,153	226,806
Total	9,934,976	\$5,500,405

Exports.	Pounds.	Value.
India-rubber	110,303	\$91,536
Balata	5,099	3,682
Gutta-percha	21,026	9,014
Guayule	134,060	20,069
Reclaimed rubber	1,282,873	\$111,525
Rubber scrap, imported	174,502	29,345
Rubber scrap, exported		

BOSTON ARRIVALS.

POUNDS.

July 1.—By the *Kennebec*=Singapore:
State Rubber Co. (East India)..... 2,800
L. Littlejohn & Co. (Jelutong)..... 345,000
State Rubber Co. (Jelutong)..... 850,000 1,197,800

July 19.—By the *Muncaster Castle*=Singapore:
State Rubber Co. (East India)..... 3,300
Poel & Arnold (East India)..... 9,000
Wallace L. Gough Co. (Jelutong)..... 160,000 172,300

PARA EXPORTS OF INDIA-RUBBER, JUNE, 1911 (IN KILOGRAMS).

EXPORTERS.	NEW YORK.			EUROPE.			EUROPE.			EUROPE.		
	Fine.	Medium.	Coarse.	Fine.	Medium.	Coarse.	Fine.	Medium.	Coarse.	Fine.	Medium.	Coarse.
Gruner & Co.	445,437	34,712	141,417	39,094	360,660	124,470	21,720	51,567	90,041	287,798	648,458	2,236,608
Suarez Hermanos & Co., Ltd.						152,469	3,334	45,274	221,448	221,448		
Ad. H. Alden, Ltd.	44,334	5,463	28,110	14,397	92,304	8,213	2,876	44,103	57,044	149,348		
De Lagotellerie & Co.	17,510	5,270	18,810		41,590	10,880		43,890	54,770	96,360		
Pires, Teixeira & Co.	9,690		27,390		37,080	38,080		13,530	51,610	88,690		
R. O. Ahlers & Co.						32,354		6,559	3,244	42,157		
Gordon & Co.						26,099	4,264	2,512	7,453	40,328		
A. de la Riviere & Co.			1,650		1,650					1,650		
Sundries						3,944	170	7,590	11,704	11,704		
Itacoatiara, direct						1,280	160	960	2,400	2,400		
Manaos, direct	161,936	32,345	70,537	117,875	382,693	142,175	44,262	68,156	234,622	489,215	871,908	
Iquitos, direct						8,400	166	1,530	52,061	62,157	62,157	
Total, June, 1911	378,907	77,790	287,914	171,366	915,977	548,364	76,952	174,627	520,688	1,320,631	2,236,608	
Total, May, 1911	357,379	71,911	434,788	150,926	1,015,004	793,143	117,028	185,709	631,898	1,727,778	2,742,782	
Total, April, 1911	389,417	99,628	352,154	287,232	1,128,431	823,960	114,300	185,785	589,224	1,713,269	2,841,700	
Total, March, 1911	268,926	71,692	283,502	76,499	700,619	1,349,885	176,348	399,138	551,188	2,476,559	3,177,178	
Total, February, 1911	462,123	111,594	454,235	113,921	1,141,873	1,477,804	201,533	330,181	608,595	2,618,113	3,759,986	
Total, January, 1911	728,494	157,522	563,542	245,226	1,694,784	884,484	117,265	123,838	287,438	1,413,025	3,107,809	



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SEPTEMBER 1, 1911.

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United States Imports of Crude Rubber.

OFFICIAL STATEMENT—FISCAL YEARS ENDING JUNE 30.

	1908-09.	1909-10.	1910-11.
United Kingdom .....pounds	12,825,192	15,556,981	15,953,233
Belgium	3,635,990	3,813,702	4,473,202
France	1,967,774	3,695,703	3,157,879
Germany	4,503,286	6,528,147	6,151,752
Portugal	1,882,882	1,996,530	1,752,468
Central America	861,636	1,424,449	1,342,939
Mexico	15,460,365	23,486,384	853,805
Brazil	43,993,670	39,510,920	31,020,764
Other South America.....	1,964,114	2,503,683	2,506,875
East Indies	1,127,686	2,419,956	4,624,457
Other Countries	137,300	108,226	208,886

Total .....pounds	88,359,895	101,044,681	72,046,260
Import value	\$61,709,723	\$101,078,825	\$77,244,603
Average per pound	69.8 cents	\$1.00	\$1.07

Net Imports.

Imports .....pounds	88,359,895	101,044,681	72,046,260
Exports	3,791,961	6,492,947	5,267,588

Net imports	84,567,934	94,551,734	66,778,672
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OTHER UNITED STATES IMPORTS.

	1908-09.	1909-10.	1910-11.
Balatapounds	1,157,018	399,003	878,305
Gutta-percha	255,559	784,501	1,648,921
Waste rubber	20,497,695	37,364,671	26,948,000
Gutta-jelutong	24,826,296	52,392,444	51,420,872
Guayule gum			19,749,522

Rubber Scrap Prices.

LATE NEW YORK QUOTATIONS—prices paid by consumers for carload lots, per pound—are unchanged:

	Aug. 1.	Sept. 1.
Old rubber boots and shoes—domestic..	9 @ 9½	9 @ 9½
Old rubber boots and shoes—foreign....	9 @ 9½	9 @ 9½
Pneumatic bicycle tires.....	4½ @ 4¾	4½ @ 4¾
Automobile tires	8½ @ 8½	8½ @ 8½
Solid rubber wagon and carriage tires..	9¼ @ 9¾	9¼ @ 9¾
White trimmed rubber.....	11 @ 11½	11 @ 11½
Heavy black rubber.....	4¾ @ 5	4¾ @ 5
Air brake hose	4½ @ 4¾	4½ @ 4¾
Garden hose	1¾ @ 1¾	1¾ @ 1¾
Fire and large hose.....	2¾ @ 2¾	2¾ @ 2¾
Matting	7½ @ 1	7½ @ 1

RESULTS OF COFFEE VALORIZATION.

THE message of the President of the State of São Paulo shows that the Government has on hand 5,105,133 bags of coffee and that the balance of bonds outstanding on July 1, 1911, was equal to \$46,735,400 gold. The Federal loan outstanding had been reduced on December 31, 1910, to the equivalent of \$13,961,970 gold.

DEATH OF AN OLD EMPLOYEE.

As a mark of respect to the memory of the late Dennis Mulquennay, more than thirty-two years in the employment of the Voorhees Rubber Manufacturing Company, Jersey City, the factory was shut down for the whole day of the funeral.

STATISTICS OF RUBBER, ETC., IMPORTS.

[Fiscal years ending June 30.]

	1908-09.		1909-10.		1910-11.	
	Pounds.	Value.	Pounds.	Value.	Pounds.	Value.
Balata	1,157,018	\$522,872	399,003	\$196,878	878,305	\$624,702
Gutta-percha	255,559	82,136	784,501	167,873	1,648,921	390,548
Gutta-jelutong	24,826,296	852,372	52,392,444	2,419,223	51,420,872	2,872,633
Guayule gum*.....	88,359,895	\$61,709,723	101,044,681	\$101,078,825	19,749,522	\$10,443,157
India rubber					72,046,260	77,244,603
India rubber scrap, etc.....	20,497,695	\$1,543,267	37,364,671	\$2,998,697	26,948,000	\$2,334,870

* (Imports of Guayule gum were included in "India rubber" prior to July 1, 1910.)

HIGH GRADE RUBBER GOODS

(MADE IN CANADA)

Superior in Quality—Satisfactory in Service



BELTING

For all purposes

PACKINGS

VALVES

VALVE SHEET

TUBING

GASKETS

MATS

MOULDED GOODS

RUBBER HOSE

—FOR—

WATER
SUCTION

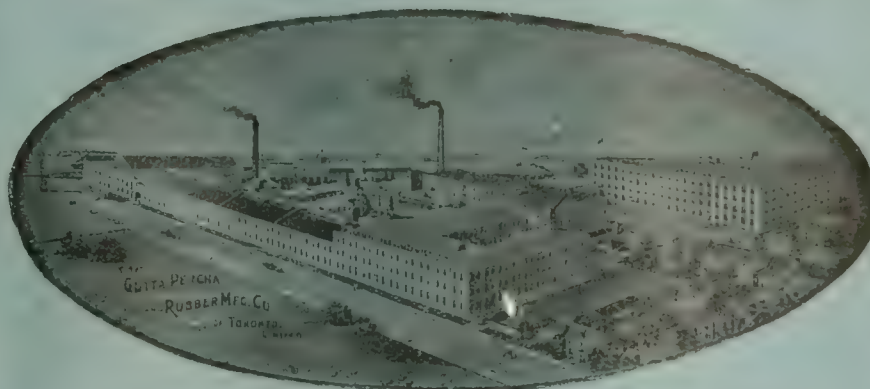
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AIR

FIRE PROTECTION

BREWRIES

PNEUMATIC TOOLS



S. T. WARREN,

President

TRUMBULL WARREN,

Treasurer

Sole Manufacturers of the celebrated "MALTESE CROSS" Rubbers.

The best fitting, best wearing and most stylish rubber footwear on the market.

C. N. CANDEE,

Sec. and Gen. Mgr.

SPECIAL ATTENTION GIVEN TO EXPORT ORDERS

The Gutta Percha & Rubber Mfg. Co. of Toronto, Limited

Head Offices—47 Yonge Street, TORONTO, CANADA

BRANCHES: MONTREAL HALIFAX WINNIPEG CALGARY VANCOUVER MELBOURNE, VIC. SYDNEY, N. S. W.

ESTABLISHED 1844

A. Schrader's Son, INC.

28-30-32 ROSE STREET

NEW YORK CITY

MANUFACTURERS OF

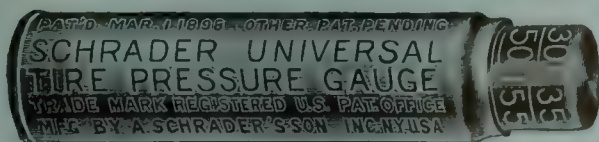
Schrader Universal Valves

FOR PNEUMATIC TIRES

Schrader Stopple and Combination Syringe Connection for Hot Water Bottles

Schrader Pillow Valves for Pillows, Life Preservers and similar articles

SCHRADER UNIVERSAL TIRE-PRESSURE GAUGES



(FULL SIZE)

RETAIL PRICE, WITH LEATHER CASE, \$1.00 EACH

Contracted Ferrules for Garden Hose

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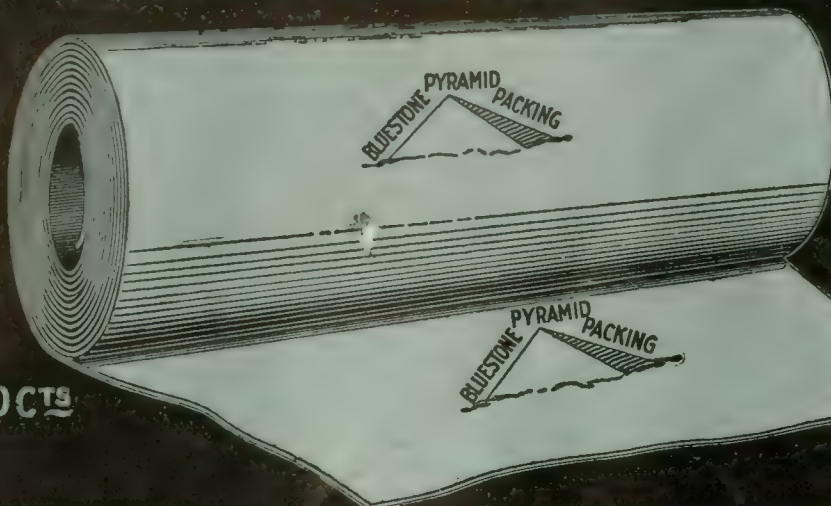
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